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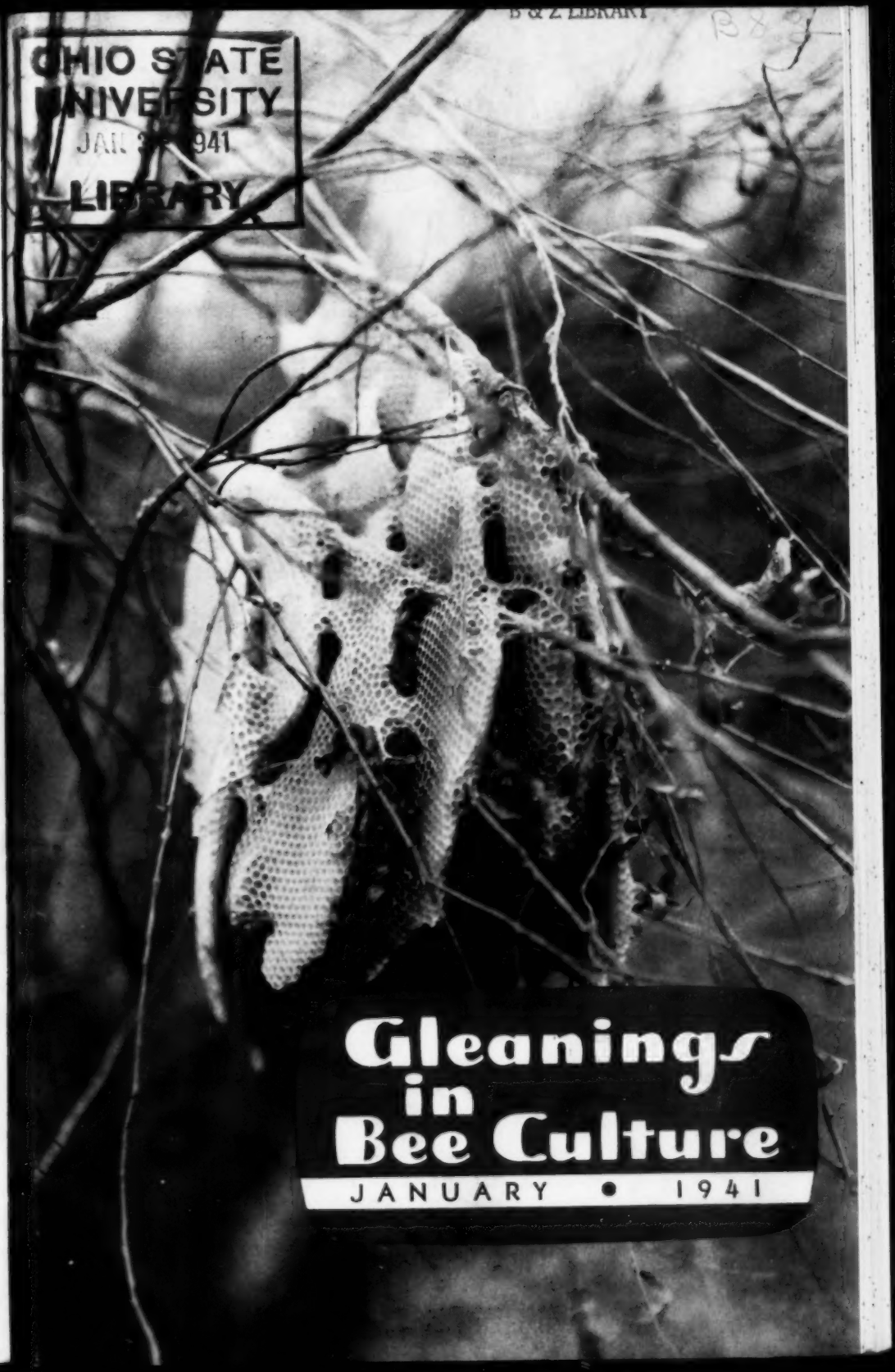

Gleanings in Bee Culture

JANUARY • 1941

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The A. I. Root Co., Medina, Ohio

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Largest Manufacturer of Bee Supplies

Gleanings in Bee Culture

Established 1873

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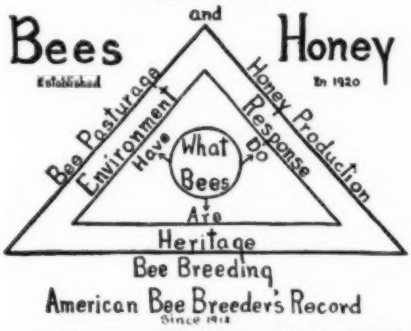

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The Monthly Honey Market

U. S. GOVERNMENT REPORT

Information from Producing Areas (last half of November).

California Points: Southern California—Rainfall during the early portion of the period helped sage, mustard and other honey plants, but during most of the time it was clear with normal temperatures. Light frost reported in some sections but not enough to damage the honey plants. Bees in the hills are dormant, but those in the valley are getting some nectar from eucalyptus and pollen from mustard. In the Coachella Valley a little nectar and much pollen are being gathered from Spanish needle and golden brush. But considerable feeding is also necessary, perhaps for 30 percent of the colonies in Southern California. Brood-rearing is practically over for the season in the hills, but there has been a little in the orchard areas. Bees are in better than average condition for the winter period. Many colonies are being moved back from cotton and alfalfa locations to the orange groves. Demand for honey has been rather slow, with prices holding about steady. Most Water White Orange and Sage honeys have been sold and though ample supplies of other honeys are available beekeepers are reluctant to sell at prevailing prices, which are among the lowest on record. Prevailing prices to beekeepers in case lots or more at Southern California delivery points, per lb.—Orange, Extra White 4¾-5¼c, White 4½-4¾c, few 5c; Sage, Extra White 4¾-5¼c, few 5½c, White 4¼-4¾c, few 5c; Sage-Buckwheat, Extra Light Amber 4 1/6-4 5/12c, Light Amber 4-4 1/6c. Beeswax has been in fairly good demand with prices holding firm. Beekeepers are receiving mostly around 20-21c per lb. for bright yellow wax, few lots 22c, ordinary wax 18-19c per lb. delivered Los Angeles.

Imperial Valley—Rain reported early in the period throughout the southwestern portion of the State. Sales reported Light Amber to Extra Light Amber Alfalfa $4.15 per case of 120 lbs. at shipping points.

Central California—Temperatures have been normal for the season, with moderate temperatures during the day and cool at night. Most of the area has had frosts. Bees are still gathering a small amount of pollen from cotton and eucalyptus where these are available. Many colonies are already being moved to almond orchards and to eucalyptus, to be available for the flow later. Little brood is now reported but colonies generally are heavy with honey and have a good supply of pollen. The weather permits flying nearly every day, but there is little upon which bees can work. The market for honey shows little change, but liberal to heavy supplies of honey are being offered. However, most dealers are still sufficiently supplied for early needs. Sales by beekeepers in ton lots or more, per lb., delivered Bay cities—Blue Curl, Extra Light Amber to White 3½-3¾c, some 4c; Light Amber Cotton-Spikeweed in used cans 3c; Light Amber Mixed Flowers 3-3¼c; delivered Interior Valley Points—Extra Light Amber Cotton 3⅛c; Light Amber Mixed Flowers 2½c; sales delivered Los Angeles—San Joaquin Valley Light Amber to Extra Light Amber Cotton-Alfalfa $4.10-4.20 per case of 120 pounds; Light Amber to Extra Light Amber Blue Curl $3.85-4.10 per case; delivered Sacramento—U. S. Fancy comb honey wrapped $3.25 per case; delivered Northern California points—Light to Dark Amber Mixed Flowers 2½-3c per lb., Light Amber Sage-Buckwheat 3c; Extra Light Amber Cotton 3¼c.

Northern California—Temperatures have been normal, with no important precipitation during this period. Bees are working lightly on star thistle, Canary Island date palm and other late flowers. Bees are in excellent shape with abundant pollen and plenty of stores. Brood-rearing is dormant but colonies are full of young bees. Rains have fallen sufficiently to germinate annual vegetation including star thistle, chickweed and mustard. Chickweed is growing rapidly and should begin to bloom by the first of the year. The market price is about the same except that occasional fine lots of Star Thistle have sold at prices above those prevailing early in the month. Sales by beekeepers in ton lots or more delivered Bay Cities—Star Thistle, White 4 1/6c; Extra Light Amber to White 3¾-4c, few lots 4½c, Light Amber to Extra Light Amber 3½-3¾c; delivered Interior Valley Points—Star Thistle, Extra Light Amber to White 3½-3⅝c, Light Amber 3¼-3½c; White Clover 4 1/12c; Blue Curl, Extra Light Amber 3¼c; Extra Light Amber Thistle-Blue Curl 3c; Light Amber Mixed Flowers 3c; Dark Amber Honeydew 2½c.

Beeswax—The market has continued quiet, with little stock offered by producers. Good yellow wax has brought beekeepers 18-20c per lb. delivered Bay Cities, occasional lot of bright-colored wax higher.

Pacific Northwest: West of Cascades—Cool weather early in the period changed to much warmer temperatures toward the close. Most sections saw freezing temperatures and some snow, with considerable snowfall in the mountains. Early spring flowers in bloom were frosted during the sudden drop in temperature and there is little upon which bees could work if the weather permitted flights. Bees are wintering well. Inquiries for package bees reported already. Honey is selling rather slowly, but better than previously. Rather wide price ranges, especially at retail. Five-pound pails of extracted, for example, are reported selling at retail from less than 30c to nearly 60c per pail. Opinions regarding the future trend of the market vary widely. Extra Light Amber to White Fireweed reported sold at 5-5⅛c per lb. delivered Portland, White to Water White small lots 6c per lb. delivered and occasional Water White 6½c, some 6⅛c with cans furnished; Extra Light Amber Maple-fireweed, case lots 7c, 60s 8½c; White to Light Amber Vetch 4c delivered Portland, 1 ton U. S. No. 1 White Vetch 5c cans returned; White Alsike and Alfalfa 5c per lb. delivered Portland. Demand reported good for comb honey. Sales of No. 1 wrapped White comb reported at $3.00-3.20 per case delivered Portland, with $3.60 paid for occasional cases of 13 to 14-oz. Clover-Vetch comb. Beeswax, 18-20c per lb. in cash or trade for good quality wax.

East of Cascades—The weather has been quite cold and snow has fallen on several occasions. Bees have been confined to the hives most of the time, with only occasional flight weather.

SUMMARY—Temperatures have ranged widely during the period, with abnormally low figures in the West and averaging far above normal east of the Great Plains. Widespread precipitation has occurred in the Central and West Gulf areas, with unusually heavy rains in Texas. Moderately heavy snows or rains also occurred in the Rocky Mountain States and the Pacific Northwest. Varying reports have been received of the condition of bees which remained on summer stands during the severe blizzard early in November. Some colonies apparently suffered little loss, but for other yards beekeepers report losses amounting to 1 to 3 pounds of bees to the hive. Usually, however, these were cases in which the hives contained many old bees. Beekeepers are almost unanimous in agreeing that the condition of nectar-bearing plants is superior to that of a year ago; and with the ground well soaked with moisture, prospects for a good nectar flow in 1941 appear encouraging. In most areas also bees are in better condition than they were a year ago at the beginning of the winter period.

Honey continues to move unusually rapidly over most of the country, and commercial beekeepers in many sections already report sharply depleted stocks. The market price in the North Central States has strengthened due to increased sales of honey to Canada, but elsewhere the market is only steady. Nevertheless there appears to be an undercurrent of strength to the market tone, based upon the light supply of honey at this time as compared with that of a year ago, the increased demand from Canada, and the generally improved market situation for many commodities. The retail market, and the wholesale market for small pails, appear weaker than the market for 60s in large lots. Demand for comb honey is variable, but in general is reported good, with stocks insufficient to supply the demand. The market for beeswax has strengthened recently, due in part to the anticipation on the part of some large buyers of beeswax that imports may be curtailed.

Monthly Report of Honey Producers

Early in December, 1940, we sent the following questions to honey producers: 1. what per cent of the honey produced in your locality has already left the hands of the producers? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots, (carload or less) in your locality during the past month for (a) Extracted honey, per pound? (b) Comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 6. How does the number of colonies to be wintered in your locality compare with that of last year? Give answer in per cent. 7. What is your estimate of prospects for a normal honey crop in 1941, considering the present condition of the bees and the honey plants? Give answer in per cent of average crop for your locality. The answers received are tabulated as follows:

Date			1.	2.		3.		4. To Consumers		5.	6.	7.
Dec.	State.	Name.	Per-cent Sold.	Large Ex.	Lots. Comb.	To Grocers Ex.	Comb.	Ex.	Comb.	Move-ment.	No. colo. Wint.	1941 Pros-pects.
7	S-Ala.	(J. C. Dickman)				40		.48		Fair	100	100
6	B. C.	(A. W. Finlay)	80	.10		.65		.85		Fair	100	100
7	S-Calif.	(L. L. Andrews)	50—	.04½		.42		.45	.20	Good	100	25
6	SE-Colo.	(O. E. Adcock)	10	.04¼		.38	3.00	.45	.18	Slow		100
8	E-Conn.	(Allen Latham)	40			.75	4.75	1.00	.29	Fair	95	100
5	S-Fla.	(C. C. Cook)		.04		.35		.50		Slow	100	Good
6	C-Fla.	(Harry Hewitt)	70			.50		.65		Fair	100	90
6	SE-Ga.	(J. J. Wilder)	85	.05¾		.45		.55		Fair	115	90
4	S-Ills.	(Carl E. Killion)	75	.06¼	3.12	.45	3.38	.59	.20	Rapid	75	80
4	NC-Ind.	(T. C. Johnson)	75			.40	3.00	.50	.15	Slow	90	75
4	NW-Ind.	(E. S. Miller)	60			.50	3.00	.65	.20	Slow	60	90
7	W-Iowa	(E. G. Brown)	95	.04½				.44		Fair	100	110
15	N-Maine	(O. B. Griffin)	40				4.75		.28	Slow	100	100
6	C-Md.	(S. G. Crocker)							.25	Slow		
11	N-Mich.	(Ira D. Bartlett)	50			.38	3.00	.49	.17	Fair	90	100
7	S-Mich.	(Floyd Markham)	50	.05	2.50	.40	3.00	.65	.20	Fair	100	100
9	C-Mich.	(E. D. Townsend)		.05½						Fair		
10	E-Minn.	(Floyd W. Ray)	70	.04½		.35		.39		Fair	100	100
7	W-Minn.	(B. L. Morehouse)	75	.05		.42		.49	.12	Rapid	85	105
7	W-Nev.	(Mrs. E. G. Norton)		.04½	2.50	.35				Slow	90	50
12	W-N. M.	(C. A. Baltzley)	30	.05		.45	3.70	.55	.21	Slow	80	100
10	NW-N. Y.	(Geo. B. Howe)				.50		.65	.20	Fair	90	100
3	C-N. Y.	(F. W. Lesser)	60	.06½	3.25	.45		.60		Fair	90	100
4	NW-N.C.	(C.S.Baumgarner)	100					.85	.25	Slow	100	100
5	C-N. C.	(C. L. Sams)	80			.50	3.50	.75	.20	Fair	100	100
7	NC-Okla.	(C. F. Stiles)				.45	3.50	.65	.19	Fair	105	100
6	W-Ore.	(H. A. Scullen)						.44		Fair	100	100
10	C-Penn.	(Harry Beaver)	60			.50		.60		Rapid	90	80
9	SE-Pa.	(D. C. Gilham)	30			.70	4.25	1.00	.25	Fair	85	
7	SE-S. D.	(J. F. Norgren)	30	.05		.40		.48	.13	Fair	100	95
7	E-Tenn.	(W. L. Walling)	90			.75		1.00		Fair	110	100
6	C-Texas	(T. A. Bowden)	65			.45		.55		Fair	100	100
6	S-Texas	(H. B. Parks)	55	.05		.45		.55		Fair		90
12	N-Utah	(W. H. Hendricks)				.38		.45		Fair	120	100
5	W-Vt.	(Phillip Crane)	90		3.68	.72	4.13	.85	.25	Fair	95	
12	S-Va.	(T. C. Asher)	40			.45	3.50	.59	.20	Fair	90	90
11	W-Wisc.	(E. H. Hanselman)	50			.40	3.60	.50	.18	Fair	90	80
8	N-Wyo.	(Earl C. Reed)	50			.40	3.60	.47	.18	Fair	110	75

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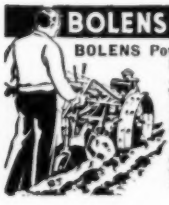

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Why is Beekeeping Such an Ideal Hobby?

By Grant D. Morse

Is it True that the Beekeeper Enjoys Each Season of the Year More Because of this Interest?

I used to wonder at my interest in bees during that part of the year when it is impossible in the northern climate to work with bees. But I do not wonder any longer, for bees and beekeeping provide an almost perfect hobby for those who are not able to follow them as a full-time pursuit.

Why is beekeeping such an ideal hobby? There are several reasons: for one thing, an investment of a few dollars gives one in bees possession of a unit that will produce food—and food is always of real concern to man. For another matter, a colony of bees is not a dumb, irresponsive thing. It can react. It does react. Bees are active. They fly, they work, they cooperate, they produce, and they sting.

Yes, bees fly when the weather is fair. All the world loves a fair day. Even school children are depressed on a foul day, and work with them is always more difficult in cloudy weather. So, too, with bees. The increased interest in the weather that comes to a man who keeps bees would alone justify beekeeping as a hobby. To the beekeeper hard winds mean sympathy and understanding for the lowlier creatures of life. Bees must work harder in windy weather to keep warm, to protect their queen, to get food, to gather nectar. Winds tear the fabric of a working bee's wings, and those wings are precious. Nature does not heal severe tears. Bees thus injured drop to earth, linger until death overtakes them and become dust again.

Snow falls please the beekeeper. He interprets the snow fall truly as the bearer of moisture for nectar-laden flowers. He sees in piled-up snow a protecting shield against cold and wind. Yet he always wonders a bit how the cluster within the hive body can get enough air to survive. Yet almost invariably it does!

Cold, freezing temperatures make the beekeeper appreciate more the faculties God has given him to enable him better to avoid the suffering and pain and death low temperatures bring to the lowlier creatures of earth. A warm room on a winter's night, good light, a fire in the fireplace warm the intellect and heart of a man. He appreciates them the more because he is truly interested in the problem his bee colony has in maintaining its life at a like time.

Spring Thrills the Beekeeper

The coming of spring teems with significance and promise to the owner of a colony of honeybees. The sportsman may see in spring's coming the picture of fish rising to a fly, the crack of a baseball bat, the swish of a tennis racket, or the sweet feel of a golf ball well hit. The housekeeper may see in spring's coming the pleasure of house doors and windows open to a view of mowed lawns, leafy trees, a food-filled vegetable garden. To all humans spring's coming can mean the passing from winter's rigors to health and freedom-bringing warm weather. And to the vigorous, energetic beekeeper, spring's coming may mean, too, all these things but contemporaneously it means a full measure of added experiences and pleasure.

XUM

To the beekeeper spring's coming means the thrill of opening the hive. And what an adventure that is no matter how many times he has done it before! First of all, it is an adventure because it holds the element of suspense—suspense caused by eternal uncertainty as to whether the colony has survived the winter season. And if the colony has survived there is suspense until the owner finds whether the queen is alive and laying, whether there is honey enough left to feed the young bees that will constitute the new crop-gathering army, whether faulty ventilation has fouled the combs, whether rodents have entered to wreak destruction of valuable worker cells.

To the beekeeper spring's coming means the pussy willow. What human who has not owned a colony of bees can truly appreciate the lowly pussy willow? Children can pluck pussy willows, and love them because they are available when gaudier blooms are not yet to be gathered. Adults can appreciate the pussy willow as the children do and even more so because, like the robin, its hardiness earns it a full measure of admiration, but only the beekeeper truly treasures the pussy willow because he sees in it the added source of stimulation to a winter-drugged honeybee in search of fresh pollen milk for the baby members of the colony for whom no food seems too fresh nor too good.

To the beekeeper spring's coming means the hard maple blossoms. How many people unfamiliar with bee lore are aware that hard maples have blossoms? To the beekeeper spring's coming means dandelions, and pear tree blossoms, and apple blossoms, and yellow sweet clover, and tall white sweet clover, and basswood blooms, and sumac, and buckwheat fields, and goldenrod, and aster. I suspect a beekeeper sees in each one of these blossoms more beauty, more fragrance, and more wealth than almost anyone else in a different walk of life.

Summer Means Work With Bees

Summer is significant to the owner of a colony of bees because it brings unrestricted opportunity to observe and work with bees. Therein lies one of the major reasons for the superiority of beekeeping as a hobby. Perhaps working with people is the finest of all privileges granted to man, because man responds to man. Man reacts to man. But, as anyone who works with humans knows, not all is perfect in human relations. Not all men respond favorably. Not all men react pleasantly. Therein lies a deep reason for the satisfaction men find in beekeeping. Furthermore, a colony of bees is more than an individual thing. A colony of bees is a group, a cooperative force whose continued existence does not depend on one life, be it drone, worker, or queen, whose existence does not depend, under proper conditions, upon any one hour or day, or season, or year, nor upon any one shelter, nor comb, nor beekeeper. Even if left to the supervision of Nature alone, a colony of bees has within it the God-given virtue to perpetuate itself. In this regard it possesses a virtue greater, so far as life on this earth is concerned, than that possessed by many other forms of life.

Fall Is the Time of Harvest

And then comes fall with its harvest. The Parable of the Sower is as applicable in beekeeping as in most other endeavors. Some bring forth better than others. This is true of bees and beekeepers—and a favorable harvest depends upon both.

I have long thought that fall is the best season of the year—or of life even. Its chief fault seems to lie, in each case, in its brevity.

There is deep satisfaction in making the harvest—in taking off the honey. The hobbyist probably gets even more satisfaction out of a crop than the business beekeeper does. For one thing, the hobbyist hopes for more, expects less than the business beekeeper, and is amazed if he gets any harvest at all.

Whatever crop he gets is perhaps more precious to him than to the business beekeeper because honey is much prized in the hobbyist's food closet. A man who doesn't like honey makes as poor a beekeeper as a distaste for vegetables makes a poor gardener.

The hobbyist usually gets a good price for his honey, too. Because he produces comparatively little, he prizes it highly, and sells it accordingly—or better still enjoys the reward of the giver as he proudly donates a comb or pail of honey to friends or relatives.

Yes, beekeeping makes the life of a man richer.

Saugerties, New York.

The Shifting Borders of the Price-cutting Field

By Walter H. Hull

It has been said, truly enough, that nobody loves a price-cutter. The difficulty in this connection is that no one can say definitely who is and who is not a price-cutter, for the reason that there is no definite dividing line between legitimate competitive price and prices unfairly cut. Somewhere along the borders of the field of fair competition the practice shades gradually into unfair price-cutting. Farther along beyond the border there is, of course, unfair practice of which no one can be in doubt—except perhaps the one who is engaged in it. But the border itself is not only indefinite, it is unfixed. It shifts one way and another according to shifting circumstance.

Furthermore, the nature of a price-cutter's offense varies with his status. It is not the same for a dealer as for a producer. The dealer, for example, may be able to set an unfair price because he has gained possession of his stock by unfair practice. His offense then is in the nature of theft. It acts chiefly against his neighbor. Since he himself makes a profit on each deal he does not,—excepting in moral respects—offend against himself.

The producer who cuts prices is in a different class. For though he offends somewhat against his neighbor, his chief offense is against himself. His neighbor will find sales falling off and customers going elsewhere when they cannot get his goods at the depressed figure. But if this neighbor's price is a fair one the best of those buyers will return to him later (if he gives them the right kind of encouragement) and will stand by him closer than before. Thus automatically the price-cutting producer weeds out the best business and turns it over to his more competent neighbor (provided always that he has such a neighbor) keeping the worst for himself.

As nearly as one can state a definite rule in this matter, it might be said that price-cutting on the part of the producer consists in selling at less than the cost of production. There are numerous exceptions, but that would cover the majority of cases. The offense comes close to being the unpardonable sin, in a business sense. For the greater sales the greater the losses, in that each sale yields the seller loss instead of gain.

Often a small producer will keep his production costs low by means of low-paid labor, as, for example, working his family at no pay except board and lodging. This may be unavoidable, even admirable, as in the case of a family working together in a fine spirit of co-operation to support itself and get ahead. Where it could as well be avoided, however, it shades into the practice of gaining possession of the stock by unfair means, as mentioned in the first case. It will be seen at once that circumstances are the determining factor here.

Although the producer who goes out to sell his product in small lots is not technically a dealer, his position is the same as the dealer's so far as price-cutting is concerned. When he sells at retail at a cent or two above the job lot figure, he is either taking the honey from himself at too low a price, or allowing himself too low a wage for the work of selling. Here, also, there are exceptions and extenuating circumstances. A man has to do the best he can, and many times it is not at all what he would like to do. But the principle holds good in general and by keeping it in mind he will at least know what he is doing. That is important.

Another exception that should be mentioned is where sales are made direct from the packing house to people who come there to buy. These people expect to get the produce for less than they would have to pay at the stores, and I think they are justified in this attitude. Many of them are neighbors upon whose fields the bees have pastured. Often they bring their own containers. Very little expense is involved in making these sales, and practically no risk. Therefore they can be made at less than the retail figure.

If you sell from the packing house in this manner you cannot expect to sell to local stores. It is a matter of policy which course you will follow. The problem is not confined to bee-

(Continued on page 61)

The Survey on Ohio Winter Losses

By W. E. Dunham
Extension Specialist in Bee Culture, The Ohio State University.

The survey on winter losses of bees has been possible through the hearty cooperation of beekeepers in the state. This year completes the fifth year of the survey. The fewest number of colonies reported for any year were over 15,000, and for this past year over 20,000 were reported. Since the reports came from all sections of the state, the data in this survey covering a 5-year period should be a fairly accurate cross-section of losses that are likely to occur in the state over a corresponding period of years.

Table I shows the average losses occurring for each year among **unpacked** and **packed** colonies in Ohio.

Table I.—Average Winter Loss of Colonies

Winter	Unpacked	Packed
1935-36	34.9	17.0
1936-37	4.5	2.9
1937-38	11.6	8.0
1938-39	4.6	4.1
1939-40	30.4	12.9

The average winter loss for 1939-40 may seem too low. This percentage represents actual winter-killed colonies and does not take into account the losses occurring after May 1 due to the effects of poor wintering and further exaggerated by one of the worst spring seasons for building colony strength.

It should be emphasized that these figures are worthy of close scrutiny, since the data presented are entirely free of personal opinion or influence of outside sources. From a research viewpoint the reports on winter losses from Ohio beekeepers would represent an "extensive random sampling" which should show a definite trend concerning the value of insulation for colonies during winter.

From the average per cent losses occurring among unpacked and packed colonies, what economic application do these data have to more profitable and safe beekeeping?

Since the entire income of the commercial beekeeper is dependent on his **producing units,** it is extremely important to adopt practices that will reduce hazards such as winter killing and weakening of colonies to the minimum. The goal that should be set up, should be one that will not only bring colonies alive through severe winters, but will insure colonies possessing bees with enough **vitality** to get off to a good start in brood rearing even under the most unfavorable spring conditions. Successful wintering of colonies means colonies at the beginning of the spring period possessing "plenty of reserve vitality", and can be likened to a "bank reserve" to meet unforeseen circumstances.

In order to keep his investment intact and realize a profit, the beekeeper at the beginning of the spring period must plan to make up his losses of winter killed and weakened colonies. There are two ways in which he may do this, namely:

1. To make up the increase from his remaining live colonies and to strengthen his weakened colonies. This procedure must be done nearly always at some expense to the honey crop. This is especially true in years of heavy winter losses. From the 5-year survey on winter losses it is obvious this problem would be more acute with **unpacked** colonies.

2. Install package bees in the hives of dead colonies and introduce queenless package bees to weakened colonies. In good commercial beekeeping areas where the surplus is harvested from the clovers this method is the logical one to adopt at the present prevailing prices of package bees. To eliminate any guesswork in having colonies of "storing strength" by June 15 concrete steps must be taken in early April to get all colonies off on an even keel in building colony strength for the major clover flow.

The **cash outgo per year for each** 100 colonies for the **unpacked** and **packed** groups is shown in Table II when utilizing package bees to insure dependable producing units for the clover honey flow. Table II is based on the winter losses as shown in Table I. To determine the number of queenless packages necessary to purchase for the unpacked and packed groups, the arbitrary figure of the per cent winter-killed colonies was also taken to represent the number of weak colonies needing queenless packages, which I believe experienced beekeepers would agree is a very conservative figure. In the

packed group an extra charge is entered to cover the expense of labor and materials in preparing the colonies for added insulation during the winter period.

Data from research workers and reports from beekeepers indicate that on the average 10 lbs. extra stores are consumed per colony when left unpacked during the winter. When considering the value of the extra honey consumed by unpacked colonies, it is shown even in years of average or below average winter losses of bees in Ohio that from the standpoint of **cash outgo** alone the packed colonies have an advantage. The result of the 5-year period shows that **packed colonies** save a cash outlay over the **unpacked colonies** of $284.41. This figure again must be considered very conservative, since if one considered the value of honey harvested by the unpacked and packed groups the chances are much in favor of the packed group because of the likelihood of stronger colonies for the harvest period.

Table II.—Cash Outgo for Unpacked vs. Packed Colonies
Per 100 colonies—5-year period

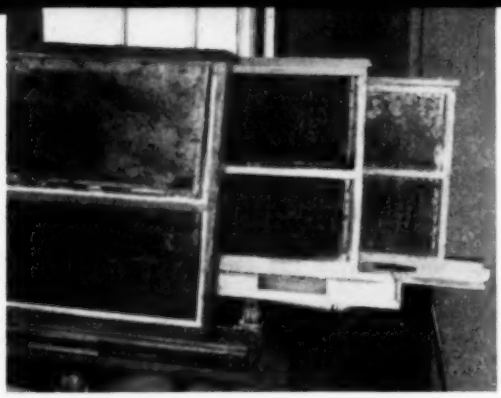
UNPACKED COLONIES

Winter	No. of 3-lb. packages to replace winter-killed colonies.	Cost of replacing loss with 3-lb. packages @ $3.00 each.	Percent live colonies needing help to insure producing units 1½-lb. queenless pkgs.	Cost of queenless packages @ 80c per pound.	Extra honey used by unpacked colonies over packed (per 100) in lbs.	Value of honey @ 4c per pound (dollars).	Total cash outlay.
1935-36	34.9	104.70	34.9	41.88	1000	$40	186.58
1936-37	4.5	13.50	4.5	5.40	1000	40	58.90
1937-38	11.6	34.80	11.6	11.92	1000	40	86.72
1938-39	4.6	13.80	4.6	5.52	1000	40	59.32
1939-40	30.4	91.20	30.4	36.52	1000	40	167.72
Cash outgo for 5-year period, 100 colo.							559.24

PACKED COLONIES

Winter	No. of 3-lb. packages to replace winter-killed colonies.	Cost of replacing loss @ $3.00 per package.	Percent of live colonies needing 1½-lb. queenless package bees.	Cost of queenless bees @ 80c per pound.	Cost of wrapping paper for packing 100 colonies.	Labor packing 100 colonies —3 men @ $2.50 each.	Cost of packing material.	Cost unpacking 100 colonies in spring.	Cash outgo.
1935-36	17	51.00	17	20.40	5.00	7.50	1.00	3.75	88.65
1936-37	2.9	8.70	2.9	3.48	5.00	7.50	1.00	3.75	29.43
1937-38	8.0	24.00	8.0	9.60	5.00	7.50	1.00	3.75	50.85
1938-39	4.1	12.30	4.1	4.92	5.00	7.50	1.00	3.75	34.47
1939-40	12.9	38.70	12.9	15.48	5.00	7.50	1.00	3.75	71.43
Cash outgo for 5-year period, 100 colo.									274.83

5-year period—Packed Colo. save cash outlay over Unpacked colo. of 284.41



Observation frames in the windows.

Pollen and Nectar Studies

By Frank E. Todd

At the Pacific States Bee Culture Field Laboratory[1]

The Pacific States Bee Culture Field Laboratory has recently undertaken a detailed study of pollen and nectar and their influence on colony development and bee behavior. Studies are being made of the gathering, storing, and utilizing of pollen and their influence on the brood-rearing activity of colonies, which it is hoped will place productive beekeeping on a much more scientific basis. The phenomenon of nectar secretion and factors affecting it are also being studied under controlled conditions, with a view to helping the beekeeper to manage his business more efficiently.

Pollen Studies

By the use of pollen traps on hives containing normal colonies, pollen has been collected and weighed daily. When compared by semi-monthly periods, the rise and fall in brood-rearing have been found to correspond with the rise and fall in the quantity of pollen coming to the hive. The peak of egg laying occurs along with the peak in pollen income, but the population peak occurs about 35 days later. Thus the bee force at the time of honey flow is greatly influenced by pollen income five weeks before.

Since pollen income rises with the blooming of pollen source plants, it will be seen that the brood-rearing of a colony is in rhythm with blooming bee plants of a locality. Dearth of pollen sources or long periods of inclement weather during the build-up period of a colony result in corresponding breaks in the population size and changes in the average age of the cluster.

In 1939 the pollen loads collected in the traps were counted between February 15 and November 1 and the average number of loads per day was calculated. One colony brought in an average of 7,800 loads per day, or a total of approximately 1.8 million loads. During one day at the peak of the fruit bloom, 29,000 loads were brought in, indicating the tremendous pollination value of a colony when it is recalled that 80 or more blossoms were worked for each load.

The maximum amount of pollen trapped from a colony during the 1939 season was 42.9 pounds. To rear a season's brood for one colony it is estimated that about 44 pounds are needed. This is equivalent to about 5,200 square inches or 135,200 cells of pollen, the number of cells in 22 standard frames. That such an enormous quantity of pollen is used by a colony can hardly be realized upon casual examination.

Pollen supplies come from innumerable sources, many of which are not recognized honey plants. The laboratory shelves are filled with hundreds of jars of pollen showing all shades from black to white and many hues of the rainbow. Samples from many known sources are being analyzed to determine the amounts of important food materials, such as protein, minerals, and vitamins, which may eventually form bases for concocting pollen substitutes. These pollens are also being fed to colonies to determine their effect on brood-rearing.

The color of pollen is of great economic importance to a beekeeper. Some of the coloring materials are fat-soluble, and as such are soluble in beeswax. They are the source of the yellow color in beeswax. Some pollens also contain water-soluble coloring materials, and they appear to be responsible for the amber color of honey. The fresh nectars so far examined, even from plants that produce dark honey, appear to be colorless. It has been shown that other colors in beeswax may come from the rendering vessels or from propolis, and some colors in honey may

[1] A contribution from the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, in cooperation with the University of California.

Frank E. Todd, H. A. Scullen, Geo. Vansell, J. I. Hambleton.

be due to other causes, such as darkening with age or excessive heat.

Windows of observation colonies have been marked off in square inches, to permit the checking of definite cells day after day to determine the progress of brood or the use of pollen. These colonies are fed syrup and pollens to determine their influence on brood-rearing. An attempt is being made to control brood-rearing through feeding, as in the feeding of chickens for egg production or of cows for milk production. Considerable progress has been made along this line, the indications being that brood-rearing may be more dependent on the food supply than on ordinary outside temperatures.

These observations under controlled conditions have shown that the efficiency of brood-rearing varies for different queens, and also for any one queen according to the abundance of the pollen supply. Queens that show low brood-rearing efficiency have spotted brood-nests, whereas queens with high efficiency show a compact brood area.

Pollen placed within the brood area is used very rapidly. By daily checking of the pollen cells it was found that one-third was utilized within 24 hours and one-half within 48 hours. This rapid turnover of pollen must curtail the brood-rearing activities.

Nectar Studies

Bees select the richest nectars available and thus frequently store a nearly pure individual-plant honey. The richness of the nectar may at times be a very important factor in insect visitation to the blossoms, and consequently in pollination. On one occasion among 10 plum varieties growing side by side the nectars showed a range in average sugar concentration from 10 to 28 percent. The bees were numerous on those varieties with the richer nectars but scarce or even absent from the others. If this production of richer nectars is a hereditary characteristic, we have a basis for the selection and breeding of better honey plants or of varieties of fruit with better pollination possibilities.

A field survey of the sugar concentrations in nectars of many honey plants has revealed a range in different plants from less than 10 percent to more than 60 percent. The degree to which the relative humidity of the atmosphere affects the sugar concentration of nectars depends on the structure of the blossoms, whether they are of the open or the tubular type, which determines the rate of evaporation. Nectar in a tobacco blossom (tubular type), for instance, shows but little change, seldom exceeding 25 percent sugar, even during a dry warm day, while that in a plum blossom (open type) is rapidly concentrated to 40 percent sugar or even higher. Again, during a humid period the nectar in an orange blossom, which apparently is secreted with about 16 percent sugar, does not become much richer and it may even be diluted with fog. At such a time the bees practically ignore the copious supply of orange nectar but eagerly seek nectars of higher sugar content in the mustard, wild radish, and hoarhound blossoms. When the atmospheric humid-

An experimental apiary at Davis, California.

Jars of honey at the Davis Laboratory.

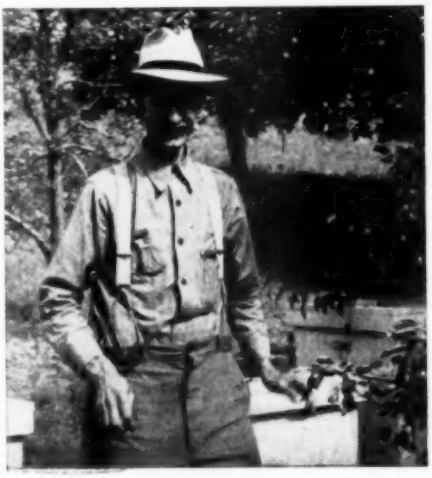
ity is lower, the water in the orange nectar evaporates until the sugar content is about 45 percent, and the bees work upon it freely, ignoring other blossoms.

A requirement for a major honey plant is that concentration values of its nectar must approach or exceed an average of 30 percent sugars. Many plants that are very numerous in places appear to be deficient in nectar sugar, as, for example, avocado, pear, apricot, cleome, and mimulus. This appears to be the reason why certain plants are seldom reported as sources of surplus honey.

To get information on factors affecting secretion and concentration of nectar, poinsettia plants have been grown in a greenhouse through two blossoming seasons. With this plant a reduction of light, temperature, and soil moisture has resulted in a lowered quantity of secretion. Cooling the plants at night with subsequent warming in the daytime did not increase the supply of nectar. Secretion was most copious during the nights following clear days. During the secreting period of an individual blossom (12 days for the male and 20 for the female), the amount of nectar could be represented by a curve having its peak at the middle of the period. The plants showed some individual differences in both the quantity and the quality (sugar concentration) of the nectar. In the open nectaries of a single plant a range of concentration from about 9 to 66 percent was obtained by exposure to progressively drier atmosphere. This does not mean that in the field the rate of evaporation is the only factor determining nectar concentration, since records show that when pear-tree nectar averaged only 15 percent sugar nectar from filaree under the trees had a concentration of about 60 percent. Thus it appears that the nectar secreted by some plants contains a larger proportion of sugars than that secreted by others.

Miss Ruth Watson.

William G. Watkins.



Filtering Honey

By E. F. Phillips

Much honey offered for sale has been somewhat changed from the condition in which the bees finished their work of ripening it, and from the condition in which it was taken from the hive, and some of it is not as good as it once was. Heating to too high a temperature or for too long a period causes the greatest damage to honey, but other things may be done to injure it. The filtering of honey has recently become common, and this usually reduces the quality of honey. Some of the damage observed in filtering honey is due to overheating which commonly accompanies it. Not much has been published on the filtering of honey in beekeeping literature, hence it may be inferred that those who use the method have obtained most of the information they may possess regarding it from comparisons with other materials which are filtered. Honey differs in some regards from such other materials, and such comparisons are unreliable.

The supposed secrecy which surrounds the filtering of honey has become somewhat amusing. One who filters honey can make no secret of it, for his product proclaims what has been done to it, yet some who follow this practice seem to fear that some competitor will also learn about it. On visiting a bottling plant, one may come across a small room in which a filter press is removed from the public gaze, and the visitor who discovers it may be asked not to tell what has been seen. Secretiveness may have hindered an exchange of experiences which would have kept some bottlers from doing so much damage to their honey.

Not long ago a honey bottler sent a bottle of his product, asking that it be graded according to the United States standard grades. The "body" was light, but the water content was all right. The color fell within the limits for white honey. Turbidity had been reduced by filtering, so there was no trouble about clarity. This honey would have been graded as U. S. Fancy except for one vital requirement, but the flavor (and color) showed that the honey had been scorched, hence the honey fell into grade No. 2. Since no name is here used, no offense will be taken at mention of this specific case, and none is intended. It seems a pity that a honey which should have been graded U. S. Fancy must be placed in No. 2 because of something done to it by the bottler.

Experiments on filtering honey were undertaken some years ago, and from this work it was found that considerable change may be made in honey, the extent and kind of change depending on the procedures used. Some of the observed changes are: (1) Honey may be made less turbid. (2) Dark honey can be made lighter, and if filtering is carried to excess, a dark honey can be made almost white, without, however, imparting to it the flavor of a light honey. (3) Strong honeys may be made less strong, with a change as well as a reduction in flavor. (4) Subsequent spoilage from fermentation may be reduced but not eliminated, this effect being due more to heating than to filtering. (5) The "body" of a honey may be reduced without increase in water content. (6) Subsequent crystal formation may be retarded and considerably modified, for if granulation occurs after filtering, the crystals may be quite coarse unless the honey is also treated to control granulation. The exact reverse may also occur. (7) Honey is often somewhat less susceptible to injury by heating after filtration, but not during filtration. (8) Some materials used to back filter cloths either pass the cloths in suspension or are slightly soluble in honey, since the "ash content" may be increased, and this seems not wholly to agree with their solubility in water. (9) Great variation is found in the results with different materials used to back filter cloths, some of the effects not being understood. (10) If honey is filtered to excess, it resembles syrup and not honey. (11) Difficulty was encountered in the experiments to get the filtering finished before the honey was damaged by overheating, and these experiments were on small quantities of honey, so that this danger increases with the size of operations.

While it is usually claimed that filtering retards granulation, the exact reverse has been reported. The full explanation of this difference is

not wholly clear, for the removal of colloids retards granulation. If, however, fine particles of the backing for filter cloths were to pass through with the honey, presumably these may serve as granulation nuclei, and this may be the cause of the difference which has been observed.

The changes listed above were observed in experiments conducted on a small scale, and it was thought undesirable to carry the work to a commercial scale, since by these processes honey is so changed as no longer to resemble honey in appearance or flavor, and it did not appear that filtering gave promise of a suitable method of preparing honey for market. Such a decision must be made on the basis of personal opinion, and there is difference of opinion on the question, since some bottlers now filter their honey, which indicates then that they think their honey is thereby improved. Such an opinion may for the present rest on personal preferences and on an ability to sell the product to an unsuspecting public, at least until some other criterion is established. Recent increase in filtering seems largely to result from commercial promotion by manufacturers of equipment, not on a knowledge of the effect of the process or on sound scientific observations.

To discuss this problem it is desirable to review facts about honey, all of which have been presented before in different connections. For the present discussion, we may consider honey to be a solution of two sugars in water with some other things in it, either in solution or in suspension. An equally dense solution of the two sugars yields a syrup of less "body" than honey, differing from a commercial invert sugar solution in the proportions of the two sugars. Such an artificially prepared syrup does not change its viscosity with changes of temperature at the same rate as does honey. The ingredients which cause honey to be different from a simple syrup of equal sugar content are then those which occur in minor proportions. These ingredients give color, flavor, additional viscosity ("body" and different viscosity changes, and bring about still other differences. These minor ingredients include such things as the mineral materials (often called the "ash"), various enzymes, certain other sugars and sugar alcohols in small amounts, volatile substances of various categories and in varying amounts which contribute flavor, several different materials which in different combinations produce the characteristic colors of honey, and colorless colloids. Honey also contains in suspension such things as pollen grains, yeast cells, small and larger wax particles, microscopic dextrose crystals, hairs of bees and other solids which vary in kind and amount with methods of extracting and the sources of the honeys. Air bubbles of various sizes occur, some air being in solution. It is a nice question which of these ingredients are essential to honey and which are accidental or even universal contaminations.

It might be thought that the desirability of elimination or retention of some of the materials in honey might depend primarily on their nutritive value. The materials which give honeys their flavors may or may not be highly important on the strict basis of nutrition, and that we shall not know until we know better what they are. They make honey good, so regardless of nutritive value, they are important. The importance of enzymes in honey, which are reduced or destroyed by heating has been discussed, and it is widely held that they are unimportant, but there is not agreement on this. Theoretically pollen grains and yeast cells in honey may have nutritive value, but this must be scant. The nutritive value of an ingredient is probably not a good criterion in deciding whether we may leave or remove it.

Genuine honey is never entirely colorless or transparent. As light rays pass through honey, two changes occur. Some of the wave lengths of light are absorbed, chiefly those at the violet end of the visible spectrum. As the spectrum is ascended from violet to red, light absorption changes, so that the light which finally passes to the outside shows differential absorption, always with more red light passing through than any other. Even the lightest honeys absorb light throughout the entire visible spectrum, and a willowherb honey, which is about the most truly white of any of our honeys, absorbs rays of light almost equally throughout the visible spectrum, sometimes giving a bottle of this honey a slightly greyish cast. Rays of light which are not absorbed may be deflected from a straight path by striking colloidal or suspended solid particles in honey, and this diffusion causes

turbidity, which in honey is usually called cloudiness. Honeys from a given floral source vary in cloudiness from year to year in an apiary, from apiary to apiary in any given year, according to the methods of extraction and other ways of handling it, most of these variations being beyond the control of the beekeeper.

While pollen grains, yeast cells, wax particles, minute crystals, air bubbles and other inclusions diffuse light, the ingredients which give honey its characteristic turbidity are colloids, minute particles which are not in true solution and which are so minute that they do not settle out. Colloidal particles carry an electric charge, and all colloids in honey carry the same charge, so that each repels the others, and turbidity does not decrease on standing. A variable ingredient of all honeys which adds to the turbidity is dextrin, an intermediate stage in the transformation of starch to sugar, which enters honey through nectar. A group of colloidal substances which also occur in all honeys are the plant pigments which in varying combinations give honeys their different colors. The color observed in a honey results from the proportions of these plant dyes. In water white honeys these occur rather abundantly but in such proportions that rays of different wave lengths are absorbed almost equally, hence the light which passes through is white. If a different proportion of these pigments occurs, the honey is darker. Some plant dyes are so small as to be almost soluble while others are more complex. They are not removed by filtering in the same ratio in which they occur in honey, hence filtration changes the color of a honey.

Filtered honeys usually have a peculiar reddish cast and the added red color of filtered honey doubtless arises from the breaking down of honey ingredients by overheating. One skilled in judging honeys can tell a filtered honey by the change of color alone, and can tell without tasting the honey that it has been scorched. While filtering removes some coloring ingredients, it adds others of less desirability.

While honeys contain air bubbles, pollen grains, and other inclusions, beekeepers have found that their removal by settling and straining improves the clarity of the honey. This suggests the feasibility of still further clarifying honey by removal of the colloids. There are various methods of removing colloids from a solution such as honey, and several of these methods have been tried. Some of these methods clarify honey even more than does filtering, so it seems desirable to pass over this subject quickly, for fear that somebody may be tempted to damage honey still more by adopting some other method. The commoner method of clarifying honey to excess is that of using a filter press, the filter cloths being backed with some finely divided material to facilitate filtration. To expedite filtration still more, the filter press may be heated by steam passing through openings in the corners of the filter plates, which is one of the sources of most serious damage.

When a batch of honey is to be put through a pressure filter, there is added to the first part of the run some type of finely divided material, such as one of the various types of charcoal or one of the finely divided earths. The added material accumulates behind or backs the filter cloths, thus increasing the filtration surface and facilitating the process. As honey is forced through the filter, certain materials contained in it are taken up by the material backing the filter cloths, either by being mechanically caught or by a more intimate union with the filtering medium.

Numerous things are available as filtering media, varying in size of particles, relative surface for a given weight of the material, solubility in water or in honey and in many other ways. They correspondingly vary in the materials in honey which they remove or reduce in amount. Variations in results also occur according to the type of filter used and the temperature at which the honey passes through the filter press, but probably the greatest differences are caused by the material backing the filter cloths. Filtering does not remove products produced by overheating honey.

The effectiveness of a material used to facilitate filtering depends considerably on the area of its surface. A high quality charcoal, for example, has a surface which is amazingly large in relation to the weight of material used, and if charcoal or bone char are used, the surface of the material accumulated behind the retaining cloths might be measured in acres or perhaps square miles. The effect will also vary with the adsorbing power of the material used, which is a phenomenon which

need not be discussed at length, except to indicate that the retention of the colloids is not a mere holding back by a fine mechanical screen but is due to the establishment of a more intimate relationship between the colloids and the adsorbant material.

Since charcoal has been mentioned, it seems well to state that of all materials used in filtering honey, the finer chars are doubtless those which modify honey most, and their use with honey cannot be defended. If certain chars are used, honey may be almost wholly decolorized and a honey as dark as buckwheat may be made virtually water white. The result of course is not a honey of good flavor for it is almost without honey flavor and the resulting product is virtually an invert sugar syrup. Such maltreatment of honey should be deemed sophistication and such a product cannot honestly be sold as honey.

With an array of pressure filters from which to choose and with great variation in the effect of the substance which different filtering materials remove from honey, the person who desires to use such an outfit is confronted with some problems of considerable importance. If he knows only that somebody else is using a filter press and buys the first combination offered him, he may get into serious trouble, by removing from honey some essential materials.

The first question which should arise in the mind of a person who considers the filtering of honey is whether the removal of any or all of the ingredients which may come out on filtering is important from the standpoint of insuring that the final product is honey. This question is not raised just for amusement, nor is it a purely academic question. The proper answer should not be based on snap judgment Because honey is put into one end of a machine is not evidence that the material which comes out the other end is also honey. We may perhaps get some light by comparing this method with some of the simpler practices.

By the better methods of settling and straining honey, the beekeeper removes the larger air bubbles and many of the suspended particles of larger size, and some pollen grains and yeast cells may rise with the scum. These are accidental inclusions and the honey is considerably clarified by the processes. So far nothing has been done which injures honey and what has been done improves it. If heat is applied to either settling or straining, that may introduce a serious injury, but that is due to heating and not to the other processes. There might be a technical question raised whether the pollen grains and yeast cells which come out to a slight extent on standing are essential ingredients of honey. Pollen comes from plants, often from those from which the nectar has been gathered. Yeast cells come from nectar to honey but are not secreted in nectar. There will be agreement that, except for possible damage from heating, the ordinary procedures of clarifying honey help and do not harm honey.

It might be maintained that any material in honey which comes to it directly from the nectaries or which is added by bees during ripening is an essential ingredient of honey. There has been no establishment of this criterion, so we must fall back on the evident fact that anything which gives honey its characteristic appearance and color or which give a honey its flavor is essential to genuine honey. This can scarcely be questioned. On this basis, excessive filtration is unjustifiable and in a broad sense constitutes sophistication of honey.

In suggesting the necessity of preservation of the flavors of honeys, a difficulty is encountered, since there are no words by which flavors may be described or in which changes in flavors may be indicated. Dependence must be placed on the experience of qualified judges of honeys. There is room for differences of opinion in certain cases whether the flavor of a honey has been improved or injured by filtering, but the real point at issue is whether or not the flavor has been changed, and whether at the end of the process, the flavor is a honey flavor. If honey is filtered to excess, the resulting flavor is not a honey flavor. It is obvious to any skilled judge of honey flavors that some of the honey put on the market after filtering has been considerably harmed with respect to flavor, which means that those who use this method are removing or changing the most valuable ingredient of their product.

There may also be opportunity for differences of opinion whether the color and general appearance of honey is improved by filtering. I recently saw a bottle of filtered honey, and the label had been printed on

both sides! Printing on the reverse side could be read through the honey in the flat bottle, and doubtless the packer thought that this was an advantage or he would not have gone to the trouble of getting a double label. The product did not look like honey and did look like a cheap syrup. It had also been severely overheated, and showed this to the eye of anybody who knows much about honey. An experienced judge of honey could tell without opening the bottle that the honey had been injured, not only by heating but also by excessive clarification, and it seems strange that the packer should wish to boast of this by using a double label.

Injury to honey by overheating in connection with filtering seems to be usual, and this calls for special mention. After honey is filtered, it is apparently less susceptible to heat injury than before, and this seems to have misled some bottlers. This reduction of heat injury means that the materials commonly removed by filtration are those which are readily damaged by heat. In the filtering process, these materials are retained on the filter cloths where they are subjected to prolonged heating, so that all the good honey passing through is damged from this source. Prolonged heating of the filter press, especially when steam is employed for this purpose, means that the accumulated material is sometimes overheated for hours. There is a tendency for honey to remain pocketed in the corners of the filter cells, sometimes adjacent to the heating tubes if steam is used, and this is enough to damage the entire run of honey. In determining the total duration of heating of a run of honey, one should count from the time that the first honey is warmed until the last of the run leaves the filter press, and that is usually longer than is feasible for any honey.

If the filtering medium is not well distributed over the cloths, there is likelihood that some of it will pass the cloths with the honey. It is not unknown for filter cloths to break under pressure, which always lets the medium escape. The bottler of honey has no clear cut clue when this occurs, as is the case in filtering other products, and it would be interesting to know whether when a cloth breaks, the whole run of honey is refiltered. Since honey should be bottled immediately after filtering, to avoid too prolonged heating, it is a safe guess that if a broken filter cloth is discovered at the end of the day, the honey is not refiltered, the bottler hoping that nobody will discover the foreign material in his honey.

Some of the problems involved in filtering honey have been discussed to show that it is not easy to establish criteria to determine whether pressure filtering of honey is desirable or detrimental. Any process which changes the flavor or color of honey should be classified as a damaging practice. Filtering to excess, as in trying to make a white honey of a dark honey, is fraudulent, for the consumer will expect the flavor of a light honey which he will not receive.

Honey must be treated with respect, and it is easily damaged and not easily improved. Filtering of honey is a practice attended by great danger, and if attempted at all, must be done under the most stringent supervision by a highly skilled operator, who not only knows how to handle the equipment but who can at once detect and discontinue damage to the honey. No bottler is justified in the use of this process unless he is certain of the effect on the honey, and since so many mistakes are being made with filtering of honey, it seems clear enough that the beekeeping industry would be benefitted if the filter presses were junked.

Authorities charged with the protection of foods against fraud have not yet taken a hand in the problem of filtering honey, and it is to be hoped that this will not be necessary. Unless one knows that the product which leaves a filter press has not been changed so as no longer to permit it to be called honey, he is not justified in the use of this method. If it is found that filtered honey is no longer pure honey, that will settle the matter, and the practice must cease. Beekeepers may find it necessary in defense of their product to ask that such a ruling be made, but it will be far better if bottlers would see that the practice is not only damaging to the beekeeping industry on which they are dependent but also damaging to their own business interests. Meanwhile, until somebody else decides this problem legally for us, it is proper to insist that one cannot soundly defend a practice about which so little is known.

Ithaca, N. Y.

This is the kind of honey bread you don't knead.

When Wintry Winds Blow

By Mrs. Benj. Nielsen

Last summer when the old thermometer soared and there was so much canning to be done, it didn't seem possible that the shelves of the canning closet would sport so many gaps—and so soon. It was so hot (our back and arms so weary) that the mere thought of eating seemed almost too much. The men folks didn't seem as enthusiastic as usual about food either. Then crisp autumn days slipped by into wintry, bone-chilling days, and appetites grew apace with the cold's intensity. Rosy-cheeked, sparkling-eyed children stamping in from school and the snowy coldness with, "Mom, I'm starved! How about some of that fresh bread and some jelly?" To say nothing of all the other in-between snacks! No wonder it's hard on the supplies.

As I look at the honey spreadings on the two top shelves of the cupboard, they remind me of a small boy's grin—a tooth missing here, two out there. But quite unlike the small boy's gums my shelves won't fill up again by themselves, so it's quite up to me to roll up my sleeves and do something about the situation. It's high time to work up into wholesome honey jellies some of those fruit juices we had left over from the canning season last year. It's time to make tangy marmalade for the breakfast toast and piping hot honey muffins. Honey seems to take off a bit of the bitter edge lots of folks object to in orange marmalade.

Last year when my supply of fruit juice was exhausted I began experimenting with the juices left over from near gallon cans of commercially canned cherries and loganberries. These near gallon packs of cherries and loganberries are terriby sour, you know, and when our supply of honey canned fruit runs low, we sometimes supplement it with servings from these economical packs. Each serving is liberally drizzled with honey; and it seems there's always some juice left. From it we make glasses of tasty, sparkling honey jellies. And it's so easy to do! Here's how:

Honey Cherry Jelly

One cup cherry juice, 3 cups honey and ½ bottle liquid fruit pectin (Certo).

Combine juice and honey in a large saucepan. Honey has a tendency to foam when heated, so this is just a precautionary measure. Bring slowly to full rolling boil. Add pectin, stirring constantly. Heat to full rolling boil again. Remove from heat at once. Skim, if necessary. Pour into freshly sterilized glasses. Paraffin while hot.

Honey Loganberry Jelly

One cup loganberry juice, 2½ cups honey and ½ bottle liquid fruit pectin (Certo).

Combine juice and honey in a large saucepan. Bring slowly to full rolling boil. Add pectin, stirring constantly. Bring again to full rolling boil. Remove from heat at once. Skim if necessary and pour into freshly sterilized glasses. Paraffin while hot.

Honey Pineapple Jelly

Five cups honey, 1½ cups unsweetened pineapple juice, and 1 cup liquid fruit pectin (Certo).

Combine honey and juice in large saucepan. Bring slowly to full rolling boil. Add pectin, stirring constantly. Heat to full rolling boil again. Remove from heat, skim, if necessary; pour into freshly sterilized glasses. Paraffin while hot.

Honey Apple Mint Jelly

One cup apple juice, 3 cups honey, ½ bottle liquid fruit pectin (Certo), and sprays of fresh mint.

Place juice and honey in a large saucepan. Bring slowly to full rolling boil. Add pectin, stirring constantly. When it boils hard remove from fire. Skim quickly and pour into freshly sterilized glasses. Dip fresh mint spray into boiling water for a mo-

Serve honey prune muffins often, sometimes with tangy orange marmalade.

ment to sterilize. Place on top of hot jelly before sealing.

If you have no juice of any kind on hand, make some honey jelly anyway. There is no closed season on making honey jelly!

Honey Jelly

Two and ½ cups honey, ½ cup water, and ½ cup liquid fruit pectin (Certo).

Combine honey and water in a large saucepan. Bring just to boiling point very carefully to prevent scorching. Remove from fire, add pectin slowly, stirring constantly. Pour at once into freshly sterilized glasses. Parraffin while hot.

Here's a deluxe jelly you will be proud to serve and it's fun to make.

Honey Mint Jelly

Three cups honey, 1 cup water, ½ bottle liquid pectin (Certo), 2 tablespoons creme de menthe, or a few drops extract of oil of peppermint, green liquid vegetable coloring and sprays of fresh mint.

Combine the honey and water in a large saucepan. Bring to a full rolling boil. Then add pectin, stirring constantly. When it comes to a full boil again remove from heat and skim. Add creme de menthe or peppermint, and sufficient green coloring to make an attractive shade. Pour into freshly sterilized glasses and top each with a spray of fresh mint, which has been dipped in boiling water to sterilize. Seal at once with hot paraffin.

Deliciously flavored honey orange marmalade demands the choicest honey and infinite patience in cutting the fruit into the fine, almost sliver-like shreds which are characteristic of good marmalade.

Honey Orange Marmalade

Four medium-sized oranges, juice of 1 lemon, 1½ cups water, ⅛ teaspoon soda, 1¾ cups honey and ½ bottle of liquid fruit pectin (Certo).

To prepare the oranges, remove the skins in quarters. Shave off and discard about ½ of the white part. Then cut the remaining rind into very fine shreds. Add water and the soda. Bring to boil and simmer (not boil) covered for 10 minutes, stirring occasionally. Add lemon juice, the orange pulp from which all of the membrane has been removed, and the orange juice. Simmer covered for 15 minutes. Measure the prepared fruit. This should measure 3 cups. Combine honey and fruit in a large saucepan. Bring to boiling point and boil gently for 20 minutes. Add pectin, stirring constantly. Bring to full boil again. Remove from the fire. Then stir and skim by turns for 5 minutes, to cool slightly and prevent fruit floating. Pour into freshly sterilized glasses. Paraffin while hot.

There was a batch of whole wheat honey bread cooling on the kitchen table when a neighbor dropped in for a friendly chat. She sniffed and promptly expressed her appreciation of such a tantalizing aroma. The aroma of baking bread is good news any time; when it's real honey bread the aroma is irresistable. And, no matter how polite you may think you are, it's difficult not to even hint just a wee bit of hunger! So, of course, I put the kettle on and began to slice through the delicate, deep golden brown crust of one of the loaves. As I sliced I remarked, "I don't knead this bread—it's so easy to make!" My caller looked a bit bewildered, then her look gave place to one of surprise, as though she privately thought I might be a bit "teched" in the head. Laughingly, I hastened to explain that I just mixed the ingredients with a spoon, instead of kneading in the usual way.

Honey Whole Wheat Raisin Bread

Two cups warm water, 1 cake compressed or granulated Maca yeast, 2 tablespoons of honey, 2 teaspoons salt, 3 cups of sifted flour, ½ cup hot water, ⅓ cup honey, 3

tablespoons shortening, 3 cups whole wheat flour, and ½ cup raisins.

Combine warm water, yeast, honey, salt and white flour. Beat until very smooth and set in a warm place until the sponge is light and bubbly. Combine hot water with honey and shortening; cool to lukewarm before adding to the sponge. Then stir in the whole wheat flour and raisins. Mix until smooth but do not knead. Place in 2 well greased loaf pans. Let rise until double in bulk. Bake in a moderate oven, 350 degrees F., for 1 hour. Remove from pans at once and place on wire rack to cool.

Here is a quick bread easy to make and bound to cause demands for seconds.

Honey Prune Muffins

One cup sifted white flour, ¾ teaspoon soda, 2 teaspoons baking powder, 1 teaspoon salt, 1¼ cups of graham flour, 1 cup cooked prunes, pitted and cut into small pieces, (measure after cutting) ⅓ cup honey, and 1 cup sour milk.

Sift the flour; measure and resift with soda, baking powder, and salt. Add the graham flour and the prunes, and mix thoroughly. Combine the honey and the sour milk. Stir into dry ingredients, stirring only enough to dampen dry ingredients. Batter will not be smooth—the little lumps will take care of themselves in baking. Fill well greased muffin tins two-thirds full. Bake in a hot oven, 400 degrees F., for 20 to 25 minutes. Serve piping hot with plenty of butter and honey—honey jelly is good on these, too.

Bread pudding has been a much abused and long suffering member of the pudding clan. This honey chocolate chip version lifts it from the just-another-pudding realm to a pudding deluxe. Delicately flavored, simply perfect honey custard at the bottom, a crust of crisp delicately browned bread and luscious gobs of semi-sweet chocolate bobbing up here and there as eating progresses. Ummm! It's the kind of treat that you hurry through the first helping so you can get started on the second!

Honey Chocolate Chip Bread Pudding

Two cups small cubes of honey bread (we prefer whole wheat honey bran bread), ½ cup Nestle's Semi-Sweet Chocolate, cut into pieces the size of a pea, 4 cups milk, scalded, 2 tablespoons butter, ¼ teaspoon salt, ⅓ cup honey, 4 slightly beaten eggs, and 1 teaspoon vanilla.

Place bread cubes in buttered casserole or baking dish, sprinkle with the chocolate chips, stirring a little to distribute. Add butter, salt, and honey to the scalded milk. Pour slowly over slightly beaten eggs; add vanilla and mix well. Pour over bread. Bake in a pan of hot water in a moderate oven, 350 degrees F., until firm, about 50 minutes.

Whole Wheat Honey Bran Bread

One and ½ cups potato water, ⅔ cup cooking oil (Mazola), ¾ cup honey, 1½ teaspoons salt, 1½ cups lukewarm water, 2 cakes granulated yeast (Maca), 4 cups sifted white flour, 4 cups whole wheat flour, and 1 cup Kellogg's All-Bran.

Put one medium-sized potato and the water in which it was cooked through a sieve. This should measure 1½ cups. Add cooking oil, honey, and salt to the hot potato water. Cool to lukewarm and add the yeast which has been softened in the lukewarm water. Stir well to mix. Then stir into the flours and All-Bran which have been combined in a large bowl or pan. Mix well. Knead until smooth and elastic. Place in a greased bowl, cover and let rise until double in bulk. Punch down, turn over and let rise again. Mold into 3 loaves; place in well greased loaf pans and let rise until double in bulk. Bake in a moderate oven, 350 degrees F., for 1 hour. Remove from pans at once and place on a wire rack to cool. As a rule, homemade bread is not very good for toasting purposes. This particular honey bread is the one which proves the exception to this rule. Sliced thick or thin and toasted it's delicious!

Let wintry winds blow! What care we when there's plenty of fresh honey bread and heaps of honey spreadings to go with it?

Aurora, Nebraska.

Honey chocolate chip bread pudding is a deluxe pudding.

Bees protected this bank from bandits.

Bees as Bankers

By J. J. Wilder

Often a bank will use a hive of live bees in demonstrating and advertising thrift, but is rare to see a colony of bees used as a depository for the general funds of a great institution, the bees serving as officers for protection and safe keeping of the funds. This was actually done for a number of years with great success. Bandits never held up the bank. The money and valuable papers were just as safe as if buried under Gibraltar.

The accompanying illustration shows this safety deposit bank that is now kept by the owner, Mr. Hamp Mizell, as a relic. Mr. Mizell lives near the old site of the lost city of Hopkins, Georgia, located at the edge of the Okefenokee Swamp.

Before its service as a bank, this old primitive gum, made from the butt of a large hollow cypress tree, contained bees. During the time it was used as a bank it contained an other similar gum, just half as high, that held the bees, and this is what puzzled the public so long. The gum that contained the bees fitted snugly inside, so bees or other insects could not pass up into the money depository. Over this depository a solid cover was nailed concealing the money. This was suggested and especially prepared by Mr. Mizell who engineered the removal of the great primitive cypress and yellow pine forest in and about the swamp.

The little city of Hopkins at the time this bee hive was brought into valuable service contained from 1600 to 2000 inhabitants. The town had a large sawmill, a logging camp, and several large business establishments. To finance these, two large payrolls had to be met each month. The town being remote, 35 miles from the nearest city, there was always a great fear of bandits and robbers. In fact, there had been several unsuccessful hold-ups. Mr. Mizell, while engineering the removal of the timber, fell upon the idea of using the top apartment of one of his large bee hives as a depository for the money. This met the approval of all concerned. The funds were smuggled to him and he placed them in the hive.

The hive picked out was similar to hundreds of others, in the same apiary, all filled with native black bees that he found as he removed the giant timber from the swamp. This log-gum apiary was located near the entrance to the city, and the hive selected was about the center containing a very strong colony. The bees were very furious and it was reported truthfully, that it was dangerous to intrude, consequently it was a deserted place except that the owner was occasionally seen in the apiary well wrapped up in mosquito netting with a large bee smoker. This usually occurred at the quiet noon hour, while everyone was at lunch. On rare occasions he was there just after dark. Of course, surplus honey was removed to fill urgent orders for honey.

During the noon hour of every Saturday Mr. Mizell was in the midst of his large apiary greatly disturbing the bees, the more the better, not so much for the sake of removing honey as for removing the payroll for the large force of employees. The money went to his kitchen in a large dishpan, the one which he always used when taking off honey. From his kitchen it was smuggled to the secretary and thence to the pay boss.

This operation continued for several years, and no one became the wiser. While it was generally known that Mr. Mizell was producing large crops of very fine honey, and gave the bees much attention, yet no one joined him, or dared to, in his apiary work. If they had, he would have robbed the bees in the usual way, removing the honey, and at the first opportunity would have returned to the bank hive for the payroll.

Hundreds of visitors to the great Okefenokee Swamp have seen this unique hive, and in fact, it still contains bees, but they are not allowed in the top apartment.

Waycross, Ga.

Bee Tree Creates Interest

By E. N. Moot

Cut section set up in owner's farm yard. The bees would not enter the box filled with comb foundation, but are working very hard to fill the tree itself for winter.

Unfilled and unused section of hollow basswood tree.

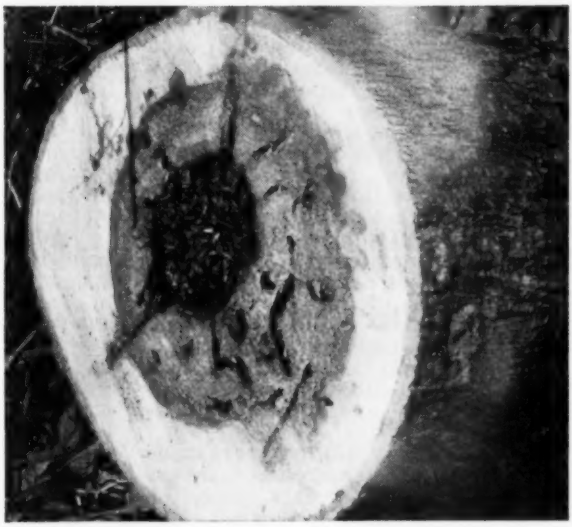
This bee tree was discovered entirely through means of smell of buckwheat honey being stored. The tree was cut and left in the woods for five days to assist bees in getting settled down. No damage was done to any of the comb and the bees settled down in a few hours. On the night of the fifth day the section of the tree containing the swarm and honey was boarded up on each end and a bag tied over the bee entrance. At dawn of the sixth day the tree was moved in the rear trunk of a passenger car with practically no jar or confusion. It took 20 minutes to move the tree one-half mile to the farm yard where the super with comb foundation was put on top and the bag removed from the entrance. In two or three hours the bees had oriented themselves and were busy collecting again. The old stump was watched closely for several days to observe if any bees returned there. Four bees were seen in observations covering one entire week after removal.

The writer, E. N. Moot of Richmondville (Schoharie County), N. Y., is interested in correspondence on how to handle this bee tree

this winter and changing it to a box hive in the spring. Please keep in mind that I feel myself to be the rankest kind of amateur apiculturist but have intense interest in the bee as a unit of a highly organized society. I have read about 12 books on bees, and teach the life of the bee in public school biology classes. I am the only one of my family ever to enter any profession but farming and

Cross section of upper end of hollow basswood bee tree. Old comb, no new honey in this section on Aug. 5, 1940.

work Saturdays and holidays on the farm where my parents live. The entire observations on this bee tree were handled as an experiment would be conducted without following too much recorded technical information on the handling of bees. I plan to check all observation with recorded facts **after** the bees have been transferred to a box hive and will follow suggestions of readers who care to send me advice which I hope will



Bees working to seal the top section of comb after unfilled small top section was cut off. Five days were taken to seal this small cut end.

come with a viewpoint of kindness rather than criticism. Several students, who work with me on Saturdays on the farm, are following closely the handling of these so-called "wild" bees.

Richmondville, N. Y.

Bee tree on ground immediately after cutting. Apparently two bee entrances and two swarms. They quieted very quickly after the tree was cut and resumed collecting buckwheat honey.

From the Field of Experience

AGAIN THAT BEE OF MYSTERY

By Allen Latham

On page 140, March, 1940, Gleanings is an article by me that raised some controversy. It is always pleasant to rouse the criticism of one who is well qualified to criticise. Miss Annie D. Betts on page 553, September, 1940, Gleanings, takes exception with me.

I honestly believe that if Miss Betts and I could get together we should find that we do not disagree in one single iota. Nowhere can I find in re-reading my own article that I said a single thing that really disagrees with what Miss Betts believes.

Not for one moment would I dispute the obvious fact that the queen was the original female bee, and that the worker came later. Still this does not in any way remove the mystery of the worker bee.

I doubt very much if the original queen had so well-developed a tongue, so well-developed pollen baskets, so well-developed chyle glands, so large a honey-sac, so complete wax glands as has the worker bee today. We cannot go back and find the truth, for it would mean travelling many millions of years back into the beginning of bee-life. My readers who believe every word literally of the Bible have the privilege of passing over this last statement.

It is now many million years since the first worker-bee appeared, and is now many million years since the queen ceased to do the work now done by the worker. Yet in all that lapse of time the queen has retained the power to transmit to her daughters instincts held by her great (to the nth power) grandmother.

In ordinary life as we see it today characteristics usually become faint or disappear in a few generations. When they reappear we call them ativistic characteristics, and wonder that a boy may have the ways that a great-great-great-great grandfather or grandmother had.

Personally I do not believe that the original queen had any wax-glands at all and that when she finally had some they were surely very crudely developed. In her active life of caring for a few young she had no leisure to stand still with a load of honey and let it change to wax. For this reason I believe that the worker bee of today has more fully developed functions than any queen ever possessed.

If my last statement be true, and I think it is, I feel that I am right in calling the worker-bee a bee of mystery. She has all the organs her remote ancestor had, but has them more highly perfected. She has instincts that were never possessed by that remote ancestor. How did she get them?

My last question raises a theory. This theory is that traits may be developed that parents never possessed. The community life of bees and ants may carry a power of developing instincts which the parents did not have at all or at least only in part.

I do not believe that Miss Betts will disagree with me in this if she will consider the diversity of workers found in some ant-colonies. If the original parents possessed all the features and ways found in some of these ant-colonies then those first ancestors must have been wonderful insects to behold.

I agree with all that Miss Betts has said in her article believing that we really agree, and only apparently disagree.

On page 630 Mr. Isaacson would disagree with me. Actually he and I are in perfect accord in this matter. But when it comes to what Mr. Isaacson says on page 226 it is a different matter entirely.

True it is that the queen is a highly specialized insect, her specialty being to lay a great many eggs. The worker-bee is also a very highly specialized insect, her specialty being plural not singular. She is an insect highly specialized in many ways, specialized probably to a far higher degree than any queen-bee ever reached.

Norwichtown, Conn.

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SWARM TIME IN THE DEEP SOUTH

By D. W. Howell

Uncle Josh kept bees in bee-gums, and was supposed to have a lot of bee knowledge, so I made him a visit.

"Good morning, Uncle Josh, how are the bees?"

"Dey jes bout git waked up, an now de winta done up an gone I see um sidlin roun lak dey know it time to staht sump'n."

"Had any swarms yet?"

"No-sa, but dey ack jes lak dey gitten fix."

Uncle Josh had real gums, mostly made from hollow gum and cypress logs and some were very large.

"Uncle Josh, you must have cut a lot of honey from this big one," I remarked.

"Aint neva nuthun dar cep'in bee wums."

Passing among the other gums, Uncle Josh gave some history of each telling of some that were good and some poor. The bees were working nicely, and carrying a nice lot of pollen.

"Hum-m-m-umm."

"What is that I hear, Uncle Josh?"

"Dar now, dat big gum sho to swa'm" and they were, pouring out.

Uncle Josh called, "Sally Ann, Sally Ann, brung dem pan hea."

Sally Ann comes running with two pans, two old plowshares, and a broken bell.

"Yu git makin uh fuss, fur make dem bees lite tell I git um."

A real noise made with pans and plowshares wakes the coon dog and he comes barking, stays clear of the bee-gums from experience, joins in the noise, barking, growling, howling.

The bees did cluster on a low tree in spite of plows, pans and dog, and it was a nice large swarm.

Uncle Josh hurries to get one of the old gums saved from a past season. Strong salt water and peach leaves are rubbed inside so that the bees will stay when hived.

Placing the gum on some boards just under the swarm, the bees are jarred off, the gum is tapped on the top, and soon the swarm is going in nicely.

Shellman, Georgia.

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MORE ON WINTERING BEES

The following is a letter dated Nov. 6, 1940, from Frank E. Todd, apiculturist in charge of Pacific States Bee Culture Laboratory, Davis, Calif., to E. R. Root, Editor of Gleanings:

Concerning Dr. Phillips' article, page 673 in the November, 1940, issue, you have made a real contribution to the wintering problem in presenting this clear statement of his views. I like especially your comment that Father Time will answer the question. This contribution will, however, stimulate much thought and no doubt much data will also result from this discussion.

Dr. Phillips has ably outlined ideal colony conditions necessary to good wintering, stressing the 3 pounds of vigorous young bees, etc. From observations in our widely varying regions on the Coast I have come to recognize the following facts: (1) his ideal condition of colonies for winter is well founded; (2) the environmental conditions necessary to produce this ideal standard are often lacking. If pollen is essential to brood-rearing, then pollen must be available to produce these young bees in the fall and it follows that a good pollen reserve would also be in the winter stores under these conditions. It appears, therefore, that perhaps Dr. Phillips' standards and Dr. Farrars' both add up to the same thing. Dr. Phillips does not recommend removing the pollen reserve (a la Hedden), but Dr. Farrar recommends adding to this reserve.

Dr. Phillips' contribution to the wintering problem has been extremely valuable and while he has stressed the temperature factor he has not neglected colony condition. It seems to me that this later work does not disagree with him, except as to the importance of temperature. The chief difference is that it does associate pollen supplies with the colony condition.

The excellent work of Gates, Phillips, Wilson, etc., done on winter temperatures has formed a base on which this later work on pollen has been built. It is significant that in all earlier work, the pollen factor was not considered. It appears therefore that this earlier work should be repeated with the pollen factor in the picture.

In U. S. Bulletin 93, Dr. Phillips says, about his classic Colony No. 1, "There was some pollen available." He did, however, remove all brood in reducing the colony to 6 frames which, according to my observations, would also remove much of the pollen reserve. This may explain why "no brood-rearing" took place until about the time March 24th, when the colony was taken out of the chamber for an eight-hour fly spell, after which he could not reduce the colony temperature even though the cham-

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ber was cooled to winter temperature. We may well ask—does high temperature stimulate brood-rearing, or is brood-rearing accompanied by high temperatures? Is not brood-rearing stimulated by other factors such as food supply, and high temperature only incidental to the brood-rearing?

If high temperature stimulated brood-rearing in Colony No. 1, why was this not also true in the case of Colony No. 3 in the above mentioned bulletin?

Dr. Phillips' Colony No. 3 in the same bulletin was on honeydew and he further states, "No cells of pollen were to be found." Therefore, not only was there no pollen reserve but also honeydew contains no suspended pollen grains. We could say that in the absence of any pollen in the diet the colony died. He shows that this Colony No. 3 maintained a high temperature (which was that of brood-rearing) and concludes it was caused by an accumulation of feces and that death was the result of wearing themselves out in producing this heat.

In all the temperature work, it appears that brood-rearing has been associated with the maintenance of brood-rearing temperatures (90-95°). Was this Colony No. 3 attempting to rear brood in the absence of pollen or was it an exception in this case? If so, according to Haydak's work, the bees would deplete their bodily nitrogen stores. Therefore, was death due to an accumulation of feces stimulating overwork or was it due to food deficiency? I feel that this question was not answered by Dr.. Phillips.

I know nothing about the wintering of bees in the north or northeast. In the Sierra Nevadas (4,000 ft.) on cedar honeydew stores (12% dextrin) colonies die out during the winter, or dwindle in the spring so that they are worthless for honey production. On checking the fall pollen reserve in these colonies it was found to be very low. There is a further factor that these conditions are not conducive to the rearing of young bees for winter cluster. It was found that when their fall pollen reserve is built up they came through the winter without loss. Perhaps honeydew flows elsewhere may also be accompanied by low pollen reserves, which is in turn associated with the lack of young bees for the winter cluster.

HONEY AS BABY FOOD

By Mrs. Howard C. Coale

A neighbor of mine had a baby girl, perfectly normal in every way at birth, but who lost weight and cried continuously because of hunger. The mother couldn't feed her, and no commercial preparation

The average child responds readily to honey when given in its milk.

seemed to agree with her, cow's milk included. At six weeks of age she weighed less than at birth.

I was worried, as I had been with the mother when the baby was born, and I was sure she would lose it, if something were not done soon. I took her some of our honey, and asked her to try a teaspoonful of it in a bottle of cow's milk instead of sugar.

It was miraculous! The baby took it greedily, did not vomit, and slept several hours. From then on she began to gain. She is now three years old and the picture of health.

Bel Air, Maryland.

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SECOND GLANCES

By C. M. Isaacson

There is much good sense in Mr. Tontz' article (page 737). He is right in saying that the main stress should be placed on **good** queens, not merely young ones. But why destroy all colonies with poor queens—why not re-queen? The new queens can be laying well in a week, in a day or

two if the smoke method is used, and can easily build up a force of young bees in time for winter. I doubt also if supersedure will ever eliminate systematic requeening; seasonal variations often cause colonies to supersede at the wrong time or not at all, even if a strain such as he speaks of was developed.

John Leake's contribution pretty well sums up the reasons why stimulative feeding has been largely abandoned (page 739). It is often unprofitable, and also dangerous; for while it can produce overflowing colonies if things go right (with a good deal of labor, incidentally), conditions may occur such as to make it actually cause harm.

John Conner gives us further comments on Dr. Phillip's November article, and on wintering ideas in general (page 740). I think he is correct in insisting that the use of a true top entrance involves the complete closure of any lower openings —to eliminate draft. This would be especially desirable in colder regions.

In connection with the clash between winter brood-rearing advocates and their opponents: I think J. L. Byer, as he so often does, has given us the most important consideration (page 772). In a cold climate, with little or no opportunity for winter flights, it will result unfavorably—where there are frequent, or a fair amount of chances for flight, it may be O.K. But I still doubt its profitable value. That bees do it naturally is no criterion. Excessive swarming is also natural (excessive from our viewpoint).

"Private Enemy No. 1" is an article containing a good deal of food for thought (page 741). Marketing is indeed the weak leg on our "three-legged stool". But don't blame the beekeeper too much for being an individualist—his very profession tends him that way. When one is striving against problems in winter, summer, against diseases and weather, and the many others that apiarists must face; himself, and only himself responsible for production or lack of it, unions or even co-ops seem a bit distant. Probably we should organize, but it isn't as easy as for those who have only a set task to do, and a "boss" over them.

Mrs. Nielsen queries whether we appreciate the many advantages of honey as we should. It is a fair question. We on the producing end, probably can't prepare the many foods for which she gives the recipes, but we can (and should) "talk" them.

"Keeping bees isn't a chore. It is in one's blood." These short sentences express one of the biggest things about beekeeping. If Mr. McMillan's interesting "Along the Blue Danube" contained nothing else, it would be worth reading for that one reminder. In Hungary or America, "it's in one's blood".

Mr. Krueger seems to believe that both the kingbird and oriole are enemies of beekeepers (page 748). I wonder if it is as a class, or if it is not that just an occasional bird acquires the habit, and causes harm. Only after careful study should a bird be condemned as a group—they are too valuable to us (incidentally, Mr. Conner's August article mentioned, was a defense of the kingbird, not a condemnation).

"Cause of Weak Colonies in the Spring" (page 750). Mr. Rahmlow says it is because of old bees. What makes a bee "old"—time or destruction of its body structure through work? The latter is the primary cause—and would these bees have been old if they had not attempted to rear brood in the winter? If they had not, they could have started on much the same footing as the package bees.

If only the whole world would remember to follow the message that Spinster Jane quotes at the conclusion of her page—its implications are needed—how badly they are needed!

That is an interesting point that the Editor brings up on page 759, that packing is not generally recommended now between walls of buildings, unless provision is made for keeping it dry. It shows that whatever style of pack we use for our bees, it must be protected from moisture to be efficient.

When one reads the list of magazines, papers, etc., which are using material furnished by our American Honey Institute (page 734), it can be seen that something is being done to bolster up that weak marketing member on our "three-legged stool". If we support the Institute properly, perhaps it can yet be made as strong as the other two.

Middle River, Minnesota.

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The Southern States Federation Meet

By E. R. Root

We get in the habit of thinking and saying that the last meeting of any organization was the best. The remark certainly fits the Tampa meeting not only from the standpoint of speakers but from the quality of their addresses.

This conference now ranks in importance with the National meeting. More than ever the North depends on the South to get its crop of honey. This will be explained more fully further on.

There were several talks given offhand that were of unusual merit; but there were three addresses that will go down in apicultural history as above the average given at any bee convention in the last ten years. In saying this I am sure I shall give no offense to any of the other speakers, I refer first to the address of Dr. Ouida D. Abbott, of Gainesville, Fla. Seldom is a speaker able to give facts and figures offhand on foods and nutrition, especially on honey, as did Miss Abbott.

Geo. H. Rea, of Cornell University, New York, often referred to as the best bee extension man in the United States, in his clear carrying voice gave some new aspects of the value of bees as pollenizers on common farm crops, like corn and garden vegetables.

Thos. Burleson, always sound and sensible on bee matters and an outstanding leader in Texas, gave a most convincing address on radio adver-

Tampa, Florida, November 18, 19, 20

—Photo by Robertson Fresh, Tampa, Fla.

tising for boosting the sale of honey. To attempt to give briefs of these three talks would be woefully inadequate and unsatisfactory.

The paper by Dr. Abbott should be put in pamphlet form and distributed to consumers. What you and I may say about the merits of honey as a food carries little weight compared to the same or a like statement coming from a high nutritional authority like Dr. Abbott with her facts and figures.

Here, I must not overlook and forget Mrs. Harriett Grace of the American Honey Institute, a graduate and trained dietitian, one who keeps the organization on a level keel without S O S calls, is always good. She is making some wonderful contacts and with the twenty thousand or more dollars that was subscribed for honey publicity at Omaha by honey packers, bee supply manufacturers, and beekeepers we shall and should expect results. See page 762 of our last issue.

Owing to lack of space I shall not be able to give more than a brief of some of the talks.

E. C. Bessonet, President of the Federation, and a leader in the South, presided at all the meetings. He has been working for some time to secure from Congress a special appropriation for the development of a better strain of bees.

E. G. LeStourgeon, of the Beekeepers' Item, outlined the purpose and work of the Southern States

Beekeepers' Federation. Why was the organization started? (1) to take care of unanswered claims against bee and queen shippers; (2) to shut out or show up dishonest advertisers of queens and package bees; (3) or to reduce express rates which were then high and almost prohibitive on package bees; (4) to handle claims and show the express companies how they could save the loss of bees in shipment.

In general the Federation has accomplished much in helping to solve the problems of the North and South in bringing about a closer cooperation and a more friendly relation.

Research in beekeeping was presented by Dr. Warren Whitcomb, Jr., of the U. S. Bee Culture Laboratory at Baton Rouge, La.

Few of us understand research and we are afraid of it. We have to know something of the habits of bees, and should have a knowledge of the facts and apply them. In the old bee journals there was more of the spirit of research than we find today. We produce a crop of honey without knowing why. Research is a study of cause. For example, we find a higher concentration of sugar in some nectars than in others. This explains why bees will visit fruit blossoms more at one time than at another and why there is more fruit where the concentration of sugar is higher. He explained how pollen can be trapped when plentiful and used at other times when it is less plentiful.

Artificial insemination has not produced queens that equal those bred naturally but this method has a place in scientific breeding.

In general, he explained how the U. S. Bee Culture Laboratories in the various states were working together and getting results.

C. H. Bishop of the Sears Farmer Market, Atlanta, Georgia, spoke on the Georgia honey show that occurred on Nov. 5 to 9, at Atlanta. Various agencies made plans for the exhibit a year in advance and the result was an exhibit that had great educational value in enabling the consumer to see and know the value of honey as a food. Mr. Bishop distributed a published report of this exhibit comprising photographs of some fifteen exhibits that showed that this exhibit must have been one of the most elaborate that was ever presented in this country in late years. Mr. Bishop and the Sears Farmers Market deserve the thanks of beekeepers over the country for this exhibit.

The topic "Honey Plants of South Carolina" was ably handled by David Dunavan of Clemson College. He divided the state into four divisions. This consisted of mountain, Piedmont, central, lower and coastal plane. The main plants were maple, apple, red bud, blackberry, black locust, holly, tulip, basswood, sourwood, aster, and gallberry.

G. G. Puett, of Hahira, Georgia, one of the extensive shippers of bees and queens, told of his ups and downs in the business; of how overconfidence in some of his fellow-men had gotten him into difficulty. He is wiser now and will not get caught the same way again.

M. C. Berry, now that J. M. Cutts has passed away, is the oldest queen and bee shipper in the whole South. He first worked under W. D. Achord, who has since moved North. Mr. Berry is one of the largest shippers and one of the most successful in pleasing his customers.

There was only one musical event at the whole Tampa meeting and that was exceptionally good. Mr. and Mrs. Gus Seeburg furnished the entertainment. Mr. Seeburg sang in a beautiful tenor voice while his wife played the accompaniment. They responded to several encores. See the following page.

Two of the veteran honey men of the Southland showed how they packed honey. One, J. J. Wilder, at one time reputed to be the most extensive beekeeper in the South, showed the new five-pound glass jar put out by the Illinois Glass Co. It made a very pretty package, one that was selling well for Mr. Wilder.

The other veteran and an old friend of the late A. I. Root, Mr. G. E. Seeburg, father of the one who sang, showed how he put up and clarified honey in glass jars. It was beautiful to look at and the flavor of the finest.

Last, but not least, was the presiding genious of the whole convention, State Bee Inspector, R. E. Foster. Most of the time out of sight, he saw to it that every detail of the meeting was carefully carried out. Foster is one of the few bee inspectors who can claim almost a perfect score of inspection. Florida perhaps comes the nearest of any state in the Union of being the freest of AFB. His inspectors as well as the beekeepers themselves are well in-

Some of the Speakers at the Tampa Meeting

1, E. C. Bessonet. 2, R. E. Foster. 3, C. H. Bishop. 4, Leslie M. Lewis. 5, G. G. Puett. 6, Mrs. Harriett M. Grace. 7, Mrs. T. W. Burleson. 8, Geo. W. Bohne. 9, A. V. Dowling. 10, Mrs. H. S. Foster. 11, Mr. Wentzel. 12, W. E. Anderson. 13, Mrs. Gus Seeburg. 14, T. W. Burleson. 15, E. S. Prevost. 16, G. E. Seeburg. 17, J. J. Wilder. 18, R. W. Sterritt, 19, A. J. Reamy. 20, Gus Seeburg. 21, M. C. Berry.

formed on brood diseases and how to get rid of them.

The newly-elected officers for 1941 are as follows:—Pres., A. V. Dowling, Valdosta, Georgia; Vice-Pres., J. G. Rossman, Moultrie, Ga.; Sec., H. W. Weatherford, Vernon Hill, Va.

The Ladies' Auxiliary was covered by Mrs. Thos. Burleson, Mrs. H. S. Foster, and Mrs. R. W. House. They all told of the merits of honey as a food and in cooking.

In conclusion: I was unable to hear or get a report of all the talks and perhaps some will appear conspicuous by their absence. Neither was I able to get pictures of all the speakers because the electric bulb flash on my camera went bad at times. There were several faces I missed and among the number were Geo. Rea and Miss Abbott.

E. G. LeSturgeon, David Dunavan, and Geo. W. Bohne.

American Honey Institute News Notes

May 1941 hold Health, Happiness, and Prosperity for you is the wish of the office force of The American Honey **Institute.**

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It is a pleasure to report that a number of colleges and universities will work with honey in their nutrition classes next semester.

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"What's New in Home Economics" published some good honey candy recipes in the December issue.

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Armour & Company includes honey in its latest release.

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Kellogg's includes recipes for quick breads that incorporate honey as an ingredient.

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California Fig Institute incorporates honey in recipes.

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A food editor whose column goes to 225 daily papers writes: "During my entire five years as editor, the column that brought the greatest comment and appreciation was devoted to Honey, stressing how it should be used, oven temperatures and versatility of uses."

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1940 Directory—In order to give everyone an opportunity to have his name in the Annual Directory of the American Honey **Institute** the time for sending in contributions will be extended to February first. May we hear from you?

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The Institute plans to have a number of new leaflets and window streamers during 1941.

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Each honey producer has the problem of making his package of honey so attractive that it will almost walk into the housewife's shopping bag.

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Letters are received almost daily asking us what vitamins there are in honey. We know of two youngsters who call honey their "Vitamin Bee". Honey has so many good qualities that we do not need to wonder about the vitamin content. Let us have Faith to have research and Patience to await the findings for we believe that we have "hidden treasures" in Honey, the delicious and nutritious natural **food.**

Have you secured a rack with four or five shelves on which to keep honey on display in stores? Might it not be good advertising to give a clerk or the radio announcer a pail of your good honey?

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Containers are being improved. Some are attractive enough to be placed right on the table.

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Advise restaurants to keep the honey jug near the coffee urn. This will keep the honey warm so that it will pour more readily. If kept in a dispenser individual servings can be easily poured out.

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Again may we ask whether it isn't good advertising to have all of those sixty-pound containers labeled even though we have but the word honey on them. Let us keep the word honey forever before the public.

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Slogans, prizes, mass displays and free recipes help honey sales. Let us stress honey products for all ages.

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May we in behalf of the American Honey **Institute** personally thank the editors of the bee journals for the generous amount of space for news and advertising that they have given us the past year.

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With the new publicity program now under way all honey producers will look forward eagerly to receiving the bee journals each month.

"BEEKEEPERS' ENTERPRISE"

The following letter from Dr. E. F. Phillips, Cornell University, is self explanatory:

I have been trying to do some detective work on a bee journal recently, without any luck so far. I have here a single copy of the Bee Keepers' Enterprise, Vol. 1, No. 1, May 15, 1893. I can find no additional copies, nor do I find this listed in any other library on bees. The leading bee men in Connecticut have no recollection of it, although it was edited by Burton L. Sage, New Haven. We seem, from all present indications, to have the sole surviving copy, which is interesting even though the journal is not so important in itself. I wonder if it would be worth while to stick in a news note about this to see if anybody has any information about the journal.

Editorials

"It is better to debate a question without settling it than to settle it without debate."---Joseph Jaubert.

Bakers Require Good Clean Honey Some beekeepers seem to have the idea that honey of inferior quality may be "palmed off" on to bakers. This may be done once but it is seldom done more than once to the same baker.

As brought out by George P. Walton of the U. S. Bureau of Chemistry and Engineering, Washington, D. C., at the Omaha meeting, some honeys are unsuited for baked goods. All bakers require honey of proper density, free from active fermentation and clean.

Honey improves the condition of dough, also the keeping qualities of the bread and has an advertising value.

It is estimated that approximately 30% of the honey produced in this country goes into baked goods and this constitutes its largest industrial use. To "palm off" inferior, dirty honey on to bakers is to jeopardize the future of this industrial outlet for honey. Bakers must have good clean honey.

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Be Sure to Burn AFB Combs We heard recently of a beekeeper who attempted to bury rather than burn diseased combs. He dug a hole about five feet deep and into this hole he dumped a number of AFB combs which contained some honey as well as diseased brood. The combs were covered up with dirt and forgotten, temporarily, at least.

One day, a few weeks later, this beekeeper happened to be passing by the buried combs and noticed some bees flying about. A closer examination revealed the fact that a skunk had burrowed a hole through the dirt, down to the diseased combs and bees from a nearby apiary were pouring in and out of the hole, robbing the honey.

When destroying diseased combs, dig a **deep hole** and be sure to burn the combs thoroughly. Build a good fire in the bottom of the hole and throw the diseased combs onto the fire. After the fire has burned down to ashes, fill in the hole with dirt. Fire is a good servant when it comes to destroying AFB.

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Public Liability and Property Damage Insurance on Bees During the Ontario Beekeepers' Association meeting held in Toronto, Nov. 26-28, a talk on the above topic was given by Robert Sutherland of Guelph, Ontario, representing the Canadian General Insurance Co.

Ontario beekeepers may take advantage of insurance on bees by having the premium included in their association membership fee. Due to the increase in colonies of bees kept in cities, towns, and urban areas, also increase in population, beekeepers, especially the commercial class, feel the need of protection against possible damage done by or to the bees. A number of suits have been brought against beekeepers and settlements made by the Insurance Co. Also, losses due to theft and pilfering have been paid.

It seems necessary, however, to require beekeepers to choose proper commercial apiary sites some distance from cultivated fields, highways, and farm buildings, also to inaugurate a program of education to get the public better acquainted with the honeybee and its service to mankind.

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The Burning Shame of Florida On page 371, June, 1940, issue we referred to the fact that since the present war the supply of wood pulp from Finland and Scandinavia had been cut off. It was learned that just as good or better a supply could be obtained from the forests of Georgia and Florida. The conclusion drawn was that the annual winter burning of grass and young growth of timber would now stop.

The Senior Editor, now in Florida, regrets to observe that the smoke from these fires is still so dense as to obstruct vision on some of the Florida highways, but it is evident,

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too, that these burnings are not as numerous as in former years.

Beekeepers have long known that these fires burn up or render useless saw and scrub palmetto, an important source of good table honey in Florida. The farmers and cattlemen are being told that it is a great mistake to set fire to the grass and destroy young pine timber. The State and National Government are warning land owners of Georgia and Florida that the nation needs their unburned timber to make wood pulp for newspapers and that they can't afford to kill the goose that lays the golden egg. Laws are being passed and fines and imprisonment are being applied to the fire starters, usually cattlemen who aver that a burned over area furnishes their stock a better and greener grass in the spring. But when it is learned that these areas will furnish material for newspaper print that will bring more money than the burned over land, it is to be hoped that the annual "burning shame of Florida" will be abated.

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A Big Boost for Honey

In the last thirty years there have been several large scale attempts to give honey a boost by concerted effort on the part of all interested along the line of publicity. The difficulty most frequently met has been the lack of capital, for in spite of the fact that the honey industry, as a whole, reaches real volume, nevertheless, the amount of money available in the past for general honey advertising, compared to the millions spent on other food products, has usually turned out to be about like the proverbial drop in the bucket.

The American Honey Institute with little to work with and much to do, has had a splendid record. Many contacts have been made and the attention of thousands of American housewives has been directed toward honey through the years the Institute has operated. This valuable work has by no means been thrown away. The best proof lies in the fact that honey, in spite of its low prices, has nevertheless fared better than some food products, the producers of which are certainly worse off than the honey producers.

At the National Meeting in Omaha, the larger packers of honey listened attentively to a suggestion offered by Mr. Paton, of The John G. Paton Co., New York City. Mr. Paton's recommendation was that the tentative nest-egg of several thousand dollars which has already been raised among the larger packers be added to and that an advertising firm known as Steve Hannagan Associates, Inc., be employed. The details of this were mentioned briefly by Mr. Deyell in his report of these national meetings in the December number, but because the plan had not yet fully materialized nor Steve Hannagan Associates formally employed, it seemed wise not to make extensive announcement of the plan at that time.

Briefly, the plan was to raise a minimum of $20,000; $7,500 to go to the American Honey Institute direct for use by Mrs. Grace and her helpers,—the remaining $12,500 to be used by Hannagan and his associates.

A fund of $12,500 if spent in national advertising would again be the proverbial drop in the bucket. Steve Hannagan and his associates, however, have had in the past extraordinary success in writing wholesome, interesting stories for newspapers and magazines—stories, which, by their very reader interest, are acceptable.

Just about the time that the December Gleanings was being mailed, the final amount of $20,000 was raised and a contract entered into with Steve Hannagan Associates, Inc. Gleanings has now been assured that the whole organization is solidly back of this new and interesting assignment, honey, and that as rapidly as possible material for publication is being assembled. Steve Hannagan and his associates will work in close cooperation with Mrs. Grace at the Institute. No special brand or kind of honey will be featured. The beautiful and romantic story of honey will be featured as never before in the history of the industry.

Inasmuch as this publicity organization has been extraordinarily successful in the past, it is the confident hope of all connected with the movement, that honey, for the very first time, will be given an adequate amount of publicity. The truth will be told in an interesting way by those who have made it their business to secure the cooperation of editors and publishers.

From time to time Gleanings expects to report progress. This will be a pleasant duty, for if a brighter day is really dawning, the heralding thereof will be good news.

Florida and the Everglades as a Bee Country The southern third of Florida called the Everglades was once a swamp impassable and utterly useless to man except to the Seminole Indians. Great canals or drainage ditches dug by the State and Nation have now made this or portions of it with its black soil veritable gardens of Eden. It is estimated that the Everglades as now drained with its black soil from a decaying vegetable growth from centuries back could supply the world with vegetables. Only a small part of the Everglades is devoted to garden truck. The rest, thousands of acres, is covered with all kinds of honey and pollen plants, principally saw and scrub palmetto and some cabbage palmetto—all good honey plants and the principal sources of honey in Florida.

Some beekeepers there number their colonies by the thousand. There are numerous small beekeepers and cattlemen. Is it a land flowing with milk and honey? Yes, and no. More bees could be kept in the Everglades and more cattle raised on the wild grass, but the climate most of the year is warm to sultry and snakes are found there.

Warning: Don't rush into Florida or the Everglades with the thought that you can or will make it your perpetual home. If you do, you will wish fervently that you could be back in the cold, cold zero North where you could be in rooms that are really warm and comfortable from a real furnace or stove.

Stoves in Florida? Most of them are not much bigger than a stovepipe hat and about as useful. They burn fat pine and get red hot. You scorch on one side and freeze on the other and then before you know it, they go out.

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The Futility of Price Cutting The selling price of honey should be based on the cost of production plus the cost of selling, plus a reasonable margin of profit. If the margin of profit is disregarded in establishing a selling price the beekeeper or the one who handles honey, does business at no profit and will eventually go out of business. This applies also to selling bees and queens.

The unethical practice of price cutting in selling honey is quite general. (1) Not long ago the writer visited a number of large food markets. A variety of brands of honey were on display, most of them of good quality and attractively packaged. There was a wide range in the retail prices, from 12c to 23c for a one-pound jar and from 39c to 59c for a 5-pound pail. Obviously the low priced honey yielded little, if any profit. Furthermore, it interferred with normal sales of other brands priced fairly.

Unfortunately there are beekeepers who dump honey onto the market at prices below the cost of producing and marketing it. This practice is not only unethical but disastrous and demoralizing to our industry. Fortunately, these price cutters automatically put themselves out of business (temporarily at least) because, after selling their crop, they are unable to buy more honey at a price low enough to supply their market and make even a meagre margin of profit. The unfortunate fact is that these same price cutters are likely to demoralize the honey market in the same way next year, if they are lucky enough to secure a crop.

In some instances price cutting is due to gross ignorance and in others to a total disregard of marketing principles.

So what? This situation cannot be corrected in a day, week, or year. The problem may be solved eventually through education. And here is a project for county and state beekeepers' associations throughout the country. If all associations would have, as one of their objectives, the dissemination of authentic information on marketing honey, stressing this in programs and printed matter, and would contact, in a diplomatic manner, beekeepers who violate rules of marketing, some progress would be made in eliminating this trouble.

At the Omaha meeting one of the speakers said that bee journals should emphasize the marketing of honey more than they do at present. During the years Gleanings has stressed marketing but we hope to devote more space to it in the future in order that we may do what we can to prevent price cutting and to stabilize the market.

Honey is too valuable a food to be dumped on the market at ruinous prices. With a little intelligent sales effort it can be marketed profitably.

XUM

From North, East, West and South

NORTHERN CALIFORNIA, Dec 5.

Weather: Our first rain came in October and continued until we were well above normal. Here in the Bay region, we had very little rain during November and none is in sight at the present time. We are having the typical Indian Summer of the middle West—a smoky atmosphere and really warm weather. Farther North, they had more rain and this is fine for the deep-rooted honey plants of that district. In the mountains, the first snowfall came early. We need snow for the protection of the mountain honey plants. They are up early in the spring with plenty of nectar which the bees greedily attack as soon as the snow is gone.

We have believed this would be a poor eucalyptus year for no other reason than that last year was a good one, and we seldom have two good years in succession. In many places the prospect is encouraging. Where bees were in right condition they took in more honey in November than they used. There is a good supply of pollen coming in. This encouraging condition has caused more bees than usual to be moved into the district.

Condition of Bees: More bees than usual are going into winter quarters with young queens and plenty of young bees, and with good stores of honey. Each year sees improvement in honey production. New producers are springing up all around us with new and improved ideas. The "old timers" tell us they will get out of the business but they won't. They will stay in and a few of them will pick up the newer ideas and make the industry better by staying in.

Honey Market: While it is a fact that we can all see the good work of the American Honey Institute in popularizing the use of honey in many new ways, and by their efforts causing full page advertisements to appear in our most expensive magazines, yet the movement of honey is not what we would like to see it. We must look for better things in the future. They are bound to come. In the meantime, live beekeepers will strive to improve conditions at home in the way of better bees, better hives, better production, and better care and preparation of the production after it is produced. New cans and new cases must take the place of any but new cans now used.

Wax: There is little change in the price of beeswax and little being offered.

Miscellaneous: The announcement of winter meetings is encouraging. At this early date, we can safely say that the number of winter meetings will greatly out-number any of the past winters.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, Dec. 2.

Weather: Clear, bright days and cool nights with slight variations have been the rule during the past month. About one inch of rain fell over much of the bee ranges of Southern California. Unfortunately high drying winds prevailed at times but generally speaking we have little to complain of. Of course, we consider the rain we got before the holidays the foundation for 1941 and with what we have now and can reasonably expect before the New Year we have nothing to worry about.

Market: There has been considerable activity among the brokers since our last letter with little if any advance in price of honey. Considerable honey has passed from the hands of the producer at no advance in price over that offered some months ago.

We sometimes think that there is a breaking point at which many beekeepers will hold no longer and the brokers are wise to it and often buy at prices previously refused by the beekeepers. White honey at five cents and light amber at four cents does not sound very encouraging to the bee men.

Beeswax is in good demand at prices around 20 cents.

Miscellaneous: A few highlights from California State meeting held in Hollywood, November 6-7-8.

There were about 150 in attendance from four or five western states.

More of the program was given over to the discussion of marketing problems and less to production methods than in former years.

Mrs. Grace in her pleasing and attractive way told of the work of the American Honey Institute and the hope of beneficial results from the efforts to popularize honey.

Over 100 pounds of pollen in one season is the report of one man who used a pollen trap to arrive at these figures. It certainly was an eye opener to many of us.

We wish that all beekeepers could have heard Dr. Cary in his talk before the meeting. "Bee stings for the relief of rheumatism, honey for health and the Vitamins it might contain". A good physician who knows what he is talking about is a valuable asset to any beekeeper's program.

Samples and some to spare of honey-coated puffed grain were distributed among those present. The weight of the grain was more than doubled when coated with the honey. We can vouch for its being good stuff for we tried it both as it came in the package and with milk and cream for breakfast.

In discussing the cost of production with one of our larger producers we learned that it was his conviction that he could produce honey at a lower cost per pound when operating 1000 or more colonies than was possible when he operated 500 or less. Granted that he was right and that we continue to sell on a competitive market, what is it going to do to the little fellow with one, two, or three hundred colonies if the larger operators continue to increase their holdings and sell at a price the little fellow cannot meet?

One of the pleasant memories of the convention is that of a visit we had with that veteran of early California beekeeping, Mr. J. F. McIntyre. Mr. McIntyre is well along in the eighties but quite active with a good memory of early day beekeeping in the Ventura country. He no longer keeps bees but has an apartment house in Hollywood.

Mr. St. John was elected President; Woodrow Miller, Vice-President, and Cary Hartman, Secretary. —L. L. Andrews, Corona, Calif.

TEXAS, December 1

Weather: November was very advantageous to the bee business. So far as the bees themselves are concerned the weather was probably a little annoying. The light rains which commenced in October continued to increase both in frequency and in water fall. This rainy period reached its climax the third week in November when the entire State of Texas experienced a heavy frost and in some places a regular blizzard. This weather has passed and the bees are again out looking over the wreck. A majority of Texas plants respond to moisture more quickly than anything else and after the frost many of the plants have come back into bloom and the bees will yet bring in small amounts of nectar and pollen to add to the winter stores. The rains which were general and abundant throughout the State assure the beekeeper of a normal crop next spring. Already the winter annuals such as horsemint are showing abundant rosettes. The guajillo plants are in full bud and beekeepers who have lived in Texas all their lives predict an early honey crop.

Conditions: During the month the writer made a trip of over two thousand miles through central and southern Texas. Everywhere beekeeping conditions were very much improved and beekeepers were in fine spirits, most of them repairing their equipment and making plans for 1941. In the Lower Valley the pink mint which has attracted so many migratory beekeepers to that section was just commencing to bloom and observations indicated that this bloom would be prolonged and abundant. Throughout this trip careful account was kept of places where food was served to see if honey was available. The only places where honey could not be obtained for the asking was at some of the very small towns where only short orders could be purchased. In fact, in most of the larger towns honey was more abundant than other syrups and a conversation with chain store men would indicate that honey is moving more rapidly than ever before in south central Texas.—H. B. Parks, San Antonio, Texas.

XIIM

BRITISH COLUMBIA, December 3

Weather: 1940 crop results for British Columbia seem to have been a fair average yield as compared to an estimated 60% of the record crop of 1938 for the whole Dominion. Fireweed is reported to have yielded well in the Coast section while in the Interior dry belt alfalfa and sweet clover yields have ranged from poor to very good. Poor wintering played some part here in lower crop returns and this in part was no doubt due to a very dry fall in 1939 with very early cessation of brood raising. In our own experience, yard averages varied all the way from a record low to a record high which latter incidentally was close to 200 pounds per colony.

Weather continued mild until November 10 when we had our first killing frost here in Kelowna, but as usual, some of us presumed too much on the weather and were finally caught in a snowstorm while packing the last of the yards. Since that time we have had an unusual amount of early snowfall and it is reported that already snow lies deeper in some of the valleys than at any time during last winter.

Conditions: Condition of the bees is also in contrast to that of last year when brood rearing ceased quite early in September. This season queens were laying well when a check-up was made at the end of September and some were laying on October 15 with the result that colonies went into winter very strong in bees and also fairly well off for stores. We ourselves have formerly wintered in one story but changes in location have rendered necessary the use of an extra story of stores besides packing combs of honey below where brood nests were light. The price of sugar is too close to the wholesale price on honey to make us anxious to help the sugar industry by feeding sugar syrup.

Prices: Honey prices in British Columbia have not advanced as much as we had expected and it is noted that while B. C. producers formerly enjoyed the highest prices in the Dominion for their product that distinction seems now to belong to the honey sold in the Maritime Provinces according to the Crop and Market Report of the Department of Agriculture. Upward trend of prices across Canada is reflected in lessened imports into B. C. from other provinces and grocery chains are not featuring cheap honey as for the last year or two.

Demand for local honey continues very keen and should yield at least more favorable returns and a living wage to the producer and we hope this will pay for a little paint for the long neglected hives.

As this is vacation period for the beekeeper we offer a suggestion gleaned from a local newspaper, People who talk of being too busy to take a vacation should learn from the lowly ant. There is nothing busier than the ant yet it always finds time to go to picnics.

The compliments of the season to one and all.—G. F. Pearcey, Kelowna, B. C.

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NEBRASKA, December 5

Weather: For the first time in many months the writer can give an optimistic report about the weather conditions. We had good fall rains which should help the honey plants for the next year considerably. As a result of the fall rains it was possible for the bees to gather copious stores for the winter months. There is, however, a fly in the ointment, so to speak. On the evening of November 10, quite without warning, we had a real, old-fashioned blizzard; communications were cut off and some sections were snow-bound for days. The weather had been comparatively mild up to this time and consequently fruit trees were in full green leaf. Reports confirmed our suspicions that the trees were damaged by this unseasonable weather. Damage was heavy and widespread. No doubt, beekeepers will be affected through loss of fruit bloom in the building up period next spring. Our old friend and standby, the dandelion, will be doubly appreciated next season. Probably heavy feeding will be in order. Much depends, however, upon the weather conditions through the winter.

Crop: The main honey crop was light in this section, south central; fair to good in the eastern section; and good in the irrigated regions of the west. This year was the most severe drouth period since 1934 when it was so dry crops could not even come up.

Market: The honey market has been rather dull, due in part, no doubt, to general crop failures in

many sections of our state. Beekeepers who retail their honey crop are noticing a pickup in the sales. Almost every fall the stores are flooded with cheap honey—some good and some otherwise. When this supply is exhausted the market steadies and local sales increase.

Miscellaneous: The National meetings held at the Paxton Hotel in Omaha were a splendid success. There were 38 states represented, over 300 persons registered and 200 attended the big banquet. A get-acquainted tea was held for the ladies on the first afternoon. The Auxiliary meeting held Wednesday afternoon was attended by 50 women and was pronounced a huge success. Niagara Falls was chosen for the 1941 convention.

In looking over the magazines this month, the writer noticed that one large national magazine carried two full-page advertisements, each featuring a honey recipe, calling for a goodly amount of Nature's finest sweet. In addition many foods editors included honey in their regular recipe departments. With this evidence of increased interest in the use of honey in cooking, it seems an opportune time for beekeepers to increase advertising and to redouble sales efforts.—Benj. Nielsen, Aurora, Nebr.

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MINNESOTA, December 6

Weather: If Minnesota beeekepers were superstitious they might easily believe the weather man has a bitter grudge against them. The officers and directors of the Minnesota Beekeepers' Association had made special efforts to prepare an unusually good program for their annual convention which was to be held in St. Paul, November 13 and 14, in conjunction with the Minnesota Horticultural Society. On November 11 and 12 such a blitzkrieg of the elements struck Minnesota as had not occurred within the memory of any excepting the old residents. Roads were completely blocked with snow drifts, and transportation within the cities was paralyzed. In St. Paul and Minneapolis many residents of one city who happened to be in the other on Monday were unable to return to their homes by any means and were compelled to stay for a day or two in hotels, all of which were filled to capacity and had to turn away large numbers. Many deaths occurred throughout the northwest where people were caught by the sudden onslaught of the storm. As an illustration of the rapidity of the weather change, on golf courses where men had played the day before, automobiles were completely covered by the snow drifts.

The beekeeping convention was necessarily cancelled and word was sent out by radio and by telephone and telegraph where these services were still operating. The postponed meeting was then scheduled to be held in Minneapolis on December 3. The weather man who had behaved quite decently during the interval, again struck, this time with a cold wave, and the beekeeper who planned to start out early to the meeting encountered from 15 to 28 degrees below zero, depending upon the part of the state he was in. Minneapolis reported —20° F. Even under these discouraging conditions, the attendance at the meeting was surprisingly good.

Reports have come in that many colonies were still out on their summer stands with no protection. In some cases the hives were completely covered with snow. One beekeeper wrote that he could drive his truck over the drifts that covered his hives. It will be interesting to see in the spring what effect such conditions will have on the wintering of the bees.

Honey plant conditions were better than for several years past when winter set in, as November precipitation was much above the average.

Miscellaneous: The annual beekeepers' short course will be held at University Farm during Farm and Home Week, January 20 to 25. Mr. Charles Hofmann of Janesville and Mr. Norris G. Ellingson of Northfield will assist in giving the course.

The following officers were elected by the Minnesota Beekeepers' Association for the coming year: President, Charles Hofmann, Janesville; Vice-president, Everard Flygare, South Haven; Secretary, M. C. Tanquary, St. Paul; Member of the Board of Directors, Frank Rojina, Excelsior.—M. C. Tanquary, St. Paul, Minn.

XUM

MICHIGAN, December 7

Weather: In much of Michigan too much rainfall last summer shortened the honey flow. At the same time clover seedings were stimulated to unusual g r o w t h. Nearly one foot of snow came before the ground froze, an ideal condition for honey plants to winter in.

Condition of Bees: Little nectar was gathered after the middle of August. Many colonies lost twenty to thirty pounds during the fall. Those who did not replace these empty combs will lose bees unless they feed in the spring.

Young queens maintained a good rate of egg-laying during the fall, but old queens tapered off egg-laying extra early. Most colonies have sufficient pollen stored, apparently, which was not the condition last fall.

Market: Reports indicate that honey is moving satisfactorily at retail. The absence of a fall honey flow seems to have improved the quality of honey offered in five pound pails, particularly "cheap" five pound pails. Buyers have apparently been able to obtain their requirements to date for 5c or less. Some beekeepers are holding for more. The market seems to have firmed ¼c to ½c in recent weeks.

The Litchfield Dairy Association, Litchfield, Michigan, has undertaken the handling of honey cooperatively for Michigan beekeepers. Considerable time is necessary to get the machinery in motion, but it is expected that their efforts will relieve the distressed honey situation by next fall.

Comb honey is unusually scarce.

The study of honey marketing conditions in Michigan, by Dr. G. N. Motts of the Economics Department, Michigan State College, is revealing some interesting facts which will be presented at the winter meeting, February 5 and 6 during Farmers' Week at M. S. C.

Miscellaneous: A new honey recipe bulletin, "Honey Flavor Harmonies", by Ruth H. Hoover, is now available upon request to Michigan State College.

Mrs. Floyd Markham ably presided over the honey cookery booth at Michigan State Fair this year. Thousands of home-makers paused at the booth to copy recipes and taste a morsel of honey cake or cookie or sip a honey drink. The honey exhibits were above average in quality and display.—R. H. Kelty, East Lansing, Mich.

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NEW YORK, December 4.

Since we last expressed ourselves in this column another active season has passed, bringing no financial returns to many and little enough to those securing fair crops due to prevailing prices of honey.

In this area the clover crop was a complete failure for the second straight year and while some sections of the state secured good crops these were scattered, occurring mainly in the north, east and west. Predictions in early August were for a huge buckwheat crop but a period of inclement weather was followed by a heavy frost which killed the plants at the height of their blossoming stage and no more honey was stored. This crop was the shortest in recent years and as a result, should be disposed of readily before more is available, without the usual export market, now non-existant. Goldenrod did not yield noticeably, but aster came to the rescue and helped provide the necessary winter stores.

Looking forward to another season we have some favorable conditions to justify a certain amount of optimism. One is an accumulated precipitation since January 1 of 1.37 inches in excess of normal; another is that the clovers are entering the winter period in fine condition, having made luxuriant growth during the moist season. Most apiaries are in at least fair condition considering the type of season just passed. Packing was completed by about the middle of October. Present indications are that more than the usual amount of stores were used during late fall and colonies may come out next spring lighter than usual. With a full-depth food chamber on all colonies we are not particularly worried.

Markets: With regard to marketing, the situation for New York beekeepers is far from promising. Much amber honey is reported this year and of this beekeepers have apparently sold only small quantities, indicating that they consider prices of-

fered are too low. This must be true if quotations we have seen are current. Even water white clover appears to be very low in price. This brings to my mind the fact that beekeepers will spend thousands of dollars on bees, equipment, and management but will invest absolutely nothing to help market the honey they produce.

Crystallized Honey: On the subject of improvement of honey for market it may be of interest to readers that a group of New York honey producers has organized the first cooperative in the United States to pack honey in finely crystallized form. In this they have followed the example of five Canadian provinces. This plant is now commencing operations and advance sales indicate consumer preference for honey in this form, something our Canadian neighbors have known for many years. Perhaps this is why Canada's per capita consumption of honey is double that of the United States.—William L. Coggshall, Ithaca, N. Y.

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PENNSYLVANIA, December 1

Weather: Our bees are going into winter quarters very light in weight. The main honey flow was light so that there was not much honey in the brood chambers when it was over. Later in September, the bees reared large quantities of brood drawing heavily upon the already limited food supply. The fall flow came late and was, like the other honey flows of the year, very light. The final result was that many colonies went into winter quarters with insufficient quantities of honey. The honey they do have is almost entirely from goldenrod, wild-aster, and silver-rod, so that the quality as well as the quantity is below normal.

Some beekeepers have been feeding their bees but there are many more who have not given their bees any attention this fall. There is still hope that some colonies, now short of food, may be saved since sugar candy can be fed during winter and colonies kept alive by its use. The use of candy as a winter food is very common in Germany and other European countries. Winter losses are expected to be high again this winter since there is no method of packing which will prevent colonies from starving when they have insufficient quantities of food.

Winter Losses: A word might be said about the losses of last winter since they were so heavy that they are still fresh in our minds. Records were taken from 5798 colonies, scattered over the entire state. They include colonies wintered in three different ways which showed the following results: 2830 not packed showed a loss of 54.6 per cent; 2549 packed showed a loss of 18 per cent; and 419 that had a top and bottom entrance showed a loss of 12 per cent. It is estimated that the loss for the State as a whole was 44 per cent. The small loss for bees with a top entrance presents an interesting picture. I do not wish to emphasize this figure since the number of colonies included is small and besides this is the first year there have been sufficient colonies in the State with a top entrance to provide figures. This phase of wintering seems to deserve careful watching and perhaps a trial on a small scale so that more definite records may be obtained in the future. Many of the colonies listed with a top entrance were wrapped with one layer of waterproof paper and a small hole was cut in the paper to meet the top entrance. A large part, although not all of these colonies, were located in the southern part of the State. More will be said about wintering at some future date.

Miscellaneous: The membership of county associations has increased from 664 members in 22 associations in 1938 to 824 members in 29 associations in 1940. This growth has taken place in spite of two lean years. Most of the county members are also members of the State Association which they may join at half the regular rate if the county has ten or more paid up members in the State Association.

The estimated average production of honey per colony for the State for 1940 was 21.5 pounds or 1.5 pounds higher than the production of last year. There is an estimated total of 176,000 colonies of bees in the State which means a total production of 3,784,000 pounds.—E. J. Anderson, State College, Pa.

XUM

VIRGINIA, December 6

Weather: This fall the weather was very favorable for beekeepers in Virginia. In the early fall there was a good amount of rain, then a period of warm clear weather, which gave us a honey flow from fall flowers. This in turn caused the queens to lay very heavily which gave us colonies with large clusters of young bees for the winter. Cold weather has come somewhat earlier this fall than usual. In some sections the mercury went to four below zero this week.

Condition of Bees: As mentioned above, bees went into winter with hives full of young bees. The honey flow was good from goldenrod and asters. Most brood chambers were completely filled, and some beekeepers report one and two supers of surplus from these sources.

Honey Crop: The 1940 honey crop was somewhat disappointing. A few sections got a good crop of clover and blue thistle honey. A little sourwood honey was secured in Patrick and Appomattox counties. There were a few good crops reported in the Tidewater section of Virginia. In some of the larger producing sections, the bees gathered honeydew from pines while the sourwood was in bloom. Sourwood had a good bloom, but it did not produce any honey. This honeydew granulated solid in the combs, and would cause them to break out of the frames, if they were put in the extractor. This honey can be used to some extent for feeding next spring.

Market: I believe 75 percent of the honey in Virginia is out of the hands of the beekeepers. The stores handling this honey, report that the movement of honey is very good. The price is not quite as high as last year, but the quality is not up to par. I believe the American Honey Institute is having a great deal to do with the better movement of honey. I think they are doing a great piece of work. **More power to the Institute.**

Miscellaneous: The Virginia State Beekeepers' Association will hold its winter meeting some time the last of February. All members will be notified later. The writer was privileged to attend the annual meeting of the North Carolina Bee Association, held at Henderson, on November 14, also the Southern States Beekeepers' Federation, held in Tampa. I only wish more of our Virginia beekeepers could have been there. I am glad to tell all Virginia beekeepers that the Southern States Federation will be held in Virginia in 1941. And I know they, with me, extend to all beekeepers a cordial invitation to come to Virginia in 1941 when the Federation meets here.—Henry W. Weatherford, Vernon Hill, Va.

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GEORGIA, December 2

Weather: This has been the d r i e s t summer and fall we have had in many years and it has had a serious effect on honey flows in the cultivated areas from Mexican clover, cotton and velvet beans. In the forest area the honey flows were better than usual. This also included the mountain region.

Honey Crop: All over the state we have had the best honey crop in years and of good quality. Bees stored enough and built up enough to assure good wintering all over the state. The main crop was from gallberry, black-gum, white tupelo, white holly, tulip poplar, and sourwood.

Honey Market: The best ever. The crop has moved as rapidly as it could be packed for market. Producers could have sold much more than they produced. There is no change in price over last year, and beekeepers seem to be perfectly satisfied.

Miscellaneous: Of late there has been a keen interest among our beekeepers. The Georgia Honey Show held in Atlanta, Nov. 4 to 7, at Sears-Roebuck Market, sponsored by Mr. C. H. Bishop, was very attractive and was visited by thousands of people.

On Nov. 7 the Georgia State Beekeepers' Association held a session to attend to some very important business relative to needed changes in our Georgia Bee Disease Law, making them more binding as to the movement of bees and equipment into the state. On the heel of this meeting we migrated on down to Tampa, Fla., where we had a joint meeting with the Florida State Beekeepers and also with the Southern Beekeepers' Conference, which was one of its greatest meetings.—J. J. Wilder, Waycross, Ga.

NORTH CAROLINA, December 4

Weather: Conditions were quite favorable for the spring honey plants to yield well in most parts of the State. The usual summer drouth came too late to materially affect honey plants. The weather was favorable for the summer and fall flows with the probable exception of the south-central part of the State. Here the dry weather at a critical time dwarfed the goldenrod and aster as to seed and bloom.

Honey Crop: Many beekeepers reported over 100% yield from the spring honey flow, especially in the east, but more than likely it was about normal for the State as a whole. This spring honey moved fairly rapidly from producer to dealer or packer. The summer flow from sweet clover was not as good as expected. Our sourwood honey flow in the west during July was very good with 90% to 100% produced. This is generally considered to be our premium honey and most of it is consumed locally at from 20c to 25c per pound, wholesale. Several beekeepers from the east moved colonies to the mountains for this flow, and found the move profitable for this season.

Conditions of Colonies: Fall conditions including a good honey flow have been extremely favorable for producing good colonies to winter successfully. As a rule they are well supplied with bees and brood. Queen breeders report a good season, indicating a large number of queens are in the colonies for maximum fall and spring brood-rearing. Honey plants are in good condition for this season of the year.—C. L. Sams, Extension Apiarist. By F. B. Meacham, Asst. Prof. Zoology and Entomology, Raleigh, N. C.

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ONTARIO, December 7.

Weather: Following a month of weather rather mild most of the time with heavy precipitation, winter came in with a bang during the closing days of November, and up to December 5 we have already had two days of zero with a low of 15 below on December 2. While it has now moderated a bit, with over a foot of snow on the level, it still seems decidedly wintry for such an early date.

It is not likely this early severe cold will adversely affect the bees unless the period of confinement to the hive should turn out to be unduly long. Locally at least, bees flew but little if any during November, and personally we would be pleased if they had a real flight during the next few weeks. However, this is rather unlikely and as our bees are mostly wintering on stores that we know to be good, there is no use worrying over the outcome. As stated in last issue of Gleanings clover went into winter in perfect shape and, of course, the heavy snowfall will not injure it and may possibly be a help if it stays all winter.

Prices: As to honey sales, and prices, there is little to say, as about all supplies are out of the hands of producers and retail prices are about the same as last month with sales rather slow. Quite a lot of honey has been coming in from the U. S. owing to the short crop in Ontario and also to a large quantity having been shipped to Great Britain. In the "baby budget" announced from Ottawa a few days ago where Parliament is in session, we notice that honey in all forms including imitations thereof is among the articles that cannot be imported from the U. S. except by special permit. Just how this will affect imports from the U. S. is uncertain but no doubt the amount allowed to come in will depend upon circumstances as they develop.

Beeswax is firm and in good demand. Increased uses of this product owing to the war, coupled with difficulties in way of importations, and also shortage here owing to a short honey crop, is responsible for the higher than usual prices for beeswax no doubt.

Miscellaneous: The annual convention of the O.B.K.A. was held in Toronto during the last week of November and as usual was well attended. From "across the line" we noticed Mr. Adams of New York and Mr. Running of Michigan not forgetting, of course, our good friend, the editor of Gleanings, Mr. Deyell. If we remember correctly we stated last year that Mr. Deyell's mother is still living in Lindsay, Ont. and we claim him as at least half Canadian even if he is an American citizen now.

Not wishing to be controversial, we could not refrain, however, from privately interviewing most of the

large producers here in Ontario as to their views on that question so much discussed in Gleanings lately—the matter of giving combs of pollen to colonies to be wintered here in Ontario. Without exception every one gave a positive veto to the idea. Those who use two-story hives for wintering stated that the lower story is always loaded with pollen in the fall, and those who use but one body, said that they often wished there was less pollen instead of more for winter. One of the most successful men we have in Ontario and one who used a one story hive for wintering, told me that in-so-far as he was concerned, he would not care if there was no pollen in the hives at all, if an abundance of natural stores was assured for early spring. Of course, this is not possible but in-so-far as wintering is concerned we think that he is right as we personally know of 100 colonies being wintered some years ago that drew out foundation in late September and early October by being fed heavily on syrup. They wintered perfectly and gave a large crop the following summer, and the apiary was sold in the fall for $1000. All particulars could be given if they were required.

By the time this is in print, another year with all its problems and uncertainties ahead will have been ushered in. While we can only hope for the best and trust to Providence for better world conditions, the writer of these notes sincerely wishes one and all of the readers of Gleanings a very Happy and Prosperous New Year. And before closing he desires especially to thank those who wrote him during the time spent in the hospital and convalescence. Letters came from as far north as Maine and south as far as the Canal Zone, and we fear that some were not answered. Letters of that nature surely are appreciated at a time when one is suffering, and to the kind friends who wrote we sincerely and gratefully say, "Thank you".—J. L. Byer, Markham, Ontario.

Disabled Veterans as Beekeepers

By H. H. Root

The United States Government is doing a grand work among disabled veterans in the CCC Camps. Located at Dennison, Iowa, is Co. B 1777 in charge of Capt. Elmer H. White. The men have 26 colonies of bees at present and are planning on double the number. They are studying beekeeping, and Prof. Paddock and Prof. Shipton, from Ames, lecture at least once a week. Many of these boys were shell-shocked during the World War. Beekeeping furnishes an interesting work project.

Spinster

A new year is before us; a clean page; a new beginning. The time has come to shut our eyes to the mistakes and failures of the past and to look ahead, aiming to make the future better than the past.

A few nights ago we heard a rare bit of wisdom, from a widely-known radio reporter! Here is what he said, —"If you do not want to be criticized, you must do nothing, say nothing, and be nothing".

Then, criticism must be a blessing in disguise,—a sort of angel in wolf's clothing. And of course it is a blessing if it leads us "To see oursels as ithers see us", and then right about face, overcoming our faults. Self-criticism, an honest-to-goodness soul-searching, is a fine thing, and it should come mighty often. And take comfort in this, when someone is saying irritating things about you, you must be someone worth thinking and talking about. Yes, "Every knock should be a boost" pushing us forcibly on the road ahead.

What will the new year bring to us? Isn't it entirely up to us? If we do our best to become finer, truer, men and women, keeping our eyes fixed on the goal we have in view, it must bring something better than heretofore,—at any rate, the satisfaction of knowing we have done our part. Isn't that incentive enough?

War, devastation, destruction, famine and suffering face the eastern hemisphere, but, God be thanked, the width of the ocean lies between that and our western world. But our sons and our countrymen are in the thick of things over there, and though our country be left free from the awful bombings and strife, yet this war must take an awful toll of our young manhood.

In the black-out of their shelter in the darkened cellar, our bees in safe security whisper and hum contentedly. They fear no sabotage, nor do we for them. Mice are the sole saboteurs to fear, but the G-men—wary cats,—can be depended upon to do their stuff, keeping close tab on their dark dealings, and pouncing upon any prowlers about the shelters.

Jane Says;

The other night in reading of how Joseph, the great ruler in Egypt, supplied his father and brothers with the wheat, so precious in time of famine, I was vastly surprised at what I read. One of the things Jacob did to appease the wrath of the strange great man, was to send him a gift of precious spices and HONEY. Surely this proves how highly this sweet was valued so long ago.

Then, too, we look upon baking with honey as something rather of an innovation. Instead, look back at the time God showered manna from the heavens to appease the hunger of the grumbling children of Israel, and you will find that manna tasted like "wafers made with honey". I guess it is true that "there is no new thing under the sun".—Spinster Jane.

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NOTICE OF CHANGE OF BEE QUARANTINE RULES AND REGULATIONS OF THE GEORGIA DEPARTMENT OF ENTOMOLOGY

All interested parties are hereby officially notified of a change in the existing rules and regulations promulgated and in force in conformity with the Bee Disease Law of Georgia, approved August 16, 1920, to be effective on and after January 1, 1941.

Regulation "A" is hereby changed and amended to read as follows:

"A"—The shipment or movement into Georgia from other States and Countries of bees, except live bees in wire cages when without combs or honey, of used or second-hand bee hives, honey combs, frames and other beekeeping fixtures is hereby prohibited except when such shipments are accompanied by a valid permit issued by the State Entomologist of Georgia. Such permits shall be issued by the State Entomologist of Georgia only after a certificate has been filed with him by the State Entomologist, State Apiary Inspector or corresponding official of the State or Country from which said bees or equipment is shipped or moved to the effect that the apiary in which such bees or equipment originated has been inspected within a sixty day period next preceeding date of entry and found apparently free from contagious and infectious diseases. It is further required that the State Entomologist of Georgia be notified ten days in advance of shipment or movement into the State of Georgia, the number of colonies of bees, the quantity of used or second-hand equipment, to be moved into the State; the date of entry and the proposed location within the State of Georgia of such bees and equipment.

—M. S. Yeomans, State Entomologist.

XUM

Heads of Grain from Different Fields

A Constant Reader

Gentlemen—I am enclosing two dollars for Gleanings for three years. You people may not know that I have had Gleanings from the start in 1873, and have read every number. I was born the same year as Ernest Root and was about ten years old when I first had Gleanings.

Very truly yours,
F. M. Tainter, Greenfield, Mass.

[The Senior Editor, E. R. Root, starting at the same time you did, joins hands with you in the hope that we may both live on for another decade, in order to see the great developments yet to take place in bee culture. We wonder if any others of the "old boys" are still living.—Ernest R. Root.]

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Good Honey Crop in England

Mr. A. H. Bowen, of Gloucestershire, England, in a recent letter writes the following: "In this Island we had a good bee and honey season and the honey is moving at a fast rate. We have never had better quality honey and the ploughing up of a million acres of grassland for wheat has resulted in a great acreage of charlock or tares which spring up in all corn sown in spring. This is a good bee plant with us. The only trouble is that if you do not get it extracted early it candies in the cells."

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Honey Hath Charms

A recent broadcast of bagpipe music over a Dallas station revealed that the pipers, champion Canadians on tour, used honey to soften the bags of their bagpipes.—H. L. Stevens, Hartford, Arkansas.

[And, let us hope that the honey sweetened the,—shall we say—music.—Editor.]

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The Idaho State Meeting

A letter from Frank Beach, Jr., of Burley, Idaho, new president of Idaho State Honey Producers' Association, states that their annual meeting held Nov. 14 and 15 at Twin Falls was a success. Mrs. Harriett M. Grace of the American Honey Institute was on the program. Also, Dr. Sturtevant of Bee Culture Laboratory at Laramie, Wyo., M. S. Stone, of Superior Honey Co., C. F. Feeler, supervising bee inspector of Idaho and Paul T. Rowell from Bureau of Plant Industry gave helpful talks. The meeting place for 1941 is Jerome, Idaho.

BEE CELLARS

The digging taxed our weak minds and strong backs; everything done by hand. The cellar is 40x10 feet, and 7 feet deep.—Chas. Hausman.

Mr. Geo. Gregg, Garrison, No. Dak., standing in the entrance to his cellar.

Fig. 1.

Fig. 2.

Fig. 3.

Choosey Bees

Sometimes when bees swarm their scouts aren't so successful in finding a suitable home. But scouts from a swarm in Ripon, Wisconsin, did pretty well by themselves last summer. No empty box or hollow tree being available for them they entered a rented building in which super combs were stored. While removing the supers for the honey flow we found one stack occupied with bees. The stack stood on an uneven floor so the bees went in from the bottom. The bees' entrance into the building was through a hole in the back door (Fig. 1). The combs in the hives happened to be jammed together on one side, so the bees happily designed a few combs of their own (Fig 2). In one of the out-yards a small swarm settled in a really large box—a two-colony packing case. As shown in Fig. 3, they had bravely set out to fill up the abundant space. The queen was already laying in the tender white combs.—Clarence Tontz, Stillwater, Okla.

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National Beekeepers' Auxiliary Meeting at Omaha

By Mrs. E. H. Bremer
Secretary and Treasurer

The National Beekeepers' Auxiliary met in annual convention October 22, 23, 24, at Omaha, Nebraska, with the meeting of the National Beekeeping Conferences. October 22 a tea was given at the Y. W. C. A. for the ladies by the Nebraska Beekeepers' Auxiliary, an Auxiliary which is just one year old. October 23 a regular meeting was held in the Paxton Hotel. Mrs. T. W. Burleson, Waxahachie, Texas, president, called the meeting to order. The first number on the program was a very interesting paper written by Mrs. Benjamin Nielsen which was read by Mrs. E. H. Bremer, Secretary-Treasurer. The second was a talk by Mrs. Harriett M. Grace, Director, American Honey Institute, on "New Trends in Nutrition." She brought as gifts to the ladies a sample of honey tissue cream and honey lotion made at the Institute. Mrs. F. B. Paddock, Ames, Iowa, then spoke on "The Value of Woman's Work in the Consumption of Honey" in which she gave a brief history of beekeeping, told of the work which the Iowa Auxiliary is doing, and introduced the members of her organization present.

At the business meeting which followed Mrs. T. W. Burleson was reelected president; Mrs. E. H. Bremer, Route 1, Box 368, San Antonio, Texas, secretary-treasurer; Mrs. L. M. Gates, Lincoln, Nebraska; Mrs. Jos. Hermann, Manchester, Iowa; Mrs. R. E. Foster, Gainesville, Florida; Mrs. Eva Wixom, Wapato, Washington; Mrs. M. Stevenson, Westwego, La.; Mrs. Walter M. Copeland, Lexington, Mass.; regional vice-presidents. It was voted to discontinue

(Continued on page 61)

XUM

Just News

On Monday evening, December 2, the warehouse of G. R. Twombly and Herman Christenson, located at Norwalk, California, was totally destroyed by fire. All of their extracting equipment, and packing equipment, storage tank, 7000 supers of full-drawn combs, approximately 75 tons of honey and two tons of crude beeswax were a complete loss. The estimated loss of between $23,000 and $25,000 is practically covered by insurance.

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Plans are already under way for a continuation of the Round-up of Illinois and Indiana beekeepers in 1941. This will be sponsored by Carl E. Killion, chief apiary inspector of Illinois. Meeting will be held at Twin Lakes Park, Paris, Ills., date to be announced later.

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The annual convention of the New Jersey Beekeepers' Association will be held in Moose Hall, 401 East State Street, Trenton, N. J., on Thursday, January 30, 1941, beginning at ten o'clock A. M. Mr. R. H. Kelty of Michigan will discuss "Apiary Management" and "Package Bee Problems". Mr. Robert S. Filmer, Associate Entomologist, N. J. Experiment Station, New Brunswick, will discuss "Importance of Near-by Selected Stock". The beekeeper's dinner will be served in the Y. W. C. A. dining hall at 6.30 P. M., following which will be an address on "Links with Lincoln".—Elmer G. Carr, Sec.-Treas.

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The Middlesex County Beekeepers' Association will meet at 19 Everett St., Concord, Mass., on Saturday, January 25, at 7 P. M. Having exchanged dates with Prof. A. M. Davis, Mr. Fred Russell of Chelmsford will speak on "Improvement of Nectar Sources". Mrs. Paul Tolstrup of Malden will be in charge of the Ladies' Auxiliary supper featuring fish chowder, crackers, cold meats, dill pickles, hot biscuits and honey, honey Washington pies and coffee. —Arthur M. Southwick, Pres.

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The Ohio Extension Service and the State Beekeepers' Association are cooperating in planning and arranging for the Beekeepers' Short Course and Annual Winter Meeting of the Association scheduled January 28, 29 and 30, Botany and Zoology Building, Ohio State University. Out-of-state speakers include: James E. Starkey, Indiana State Apiarist; Prof. Russell H. Kelty, Michigan Agricultural College; Dr. E. F. Phillips, Cornell University; and Dr. G. P. Walton, Bureau of Chemistry and Engineering, U. S. D. A. The general educational program is set-up as follows: January 28—"Problems of the small bee keeper." January 29—"Problems of the commercial beekeeper." January 30—"Marketing problems of the industry". The Beekeepers' Banquet is scheduled on the evening of January 29th, Oxley Hall Tea Room, Ohio State University. A cordial invitation is extended to all to attend this outstanding Ohio meeting.—W. E. Dunham.

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The Kentucky Beekeepers' Association will meet on Thursday, January 30, 1941, at Lexington. The program dealing largely with questions of production and management will be given by specialists in their respective fields.—W. A. Price, Secretary.

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The Beekeepers' Program for the Kansas State College Farm and Home Week will be held on Thursday, February 6, in Room 111, West Water Hall, Manhattan. Morning session: R. L. Parker, Professor of Apiculture and State Apiarist, Presiding. 9:00 a. m.—Apiary Inspection Service in 1940, R. L. Parker; 9:30 a. m. —Kansas Beekeepers and the Loss of a Sugar Crop, R. L. Parker; 10:00 a. m.—Quality Queen Influence in Honey Production, A. P. Sturtevant, Apiculturalist, Intermountain States Bee Culture Field Station, Laramie, Wyo.; 11:00 a. m.—Colony Winter Losses in Kansas, R. L. Parker. Afternoon session: R. L. Parker, Presiding. 1:30 p. m.—Prevention of Colony Winter Losses, A. P. Sturtevant; 2:30 p. m.—Two Methods of Preparing Colonies for Winter, R. C.

Smith, Professor of Entomology, K. S. C.; 3:00 p. m.—American Foulbrood Resistant Strains of Honeybees, A. P. Sturtevant.

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According to a late report, as of Dec. 16, 1940, from Department of Trade and Commerce, Dominion Bureau of Statistics, Ottawa, Canada, the 1940 honey crop for Canada was 22,633,400 pounds which is 21.6% less than it was in 1939. Exports during August, September and October, 1940, amounted to 1,970,555 pounds as compared with only 472,241 pounds during the corresponding period in 1939. Imports during the same periods were 370,583 pounds in 1940 compared with 8611 pounds in 1939. Imports during August to October, 1940, were all from U. S. A. and exports were practically all to the United Kingdom.

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Program for the Pennsylvania State Beekeepers' Association, Room D, Main Show Building, Harrisburg, Pa., January 22, Wednesday morning, 9:30: Opening remarks by the President—Elmer F. Ruestle, Philadelphia, Pa.; Invocation; Address of welcome—Hon. John H. Light, Secretary of Agriculture; A County Agent's Experience in Beekeeping—A. E. Ifft, Stroudsburg, Pa.; Methods of Handling Foul Brood Colonies—Harry W. Beaver, Troy, Pa.; Bee Inspection in Virginia—H. W. Weatherford, State Bee Inspector, Vernon Hill, Va.; Report of Apiary Inspection—Harry B. Kirk, State Apiary Inspector. Wednesday afternoon, 1:30: Report of Secretary-Treasurer—H. M. Snavely, Carlisle, Pa.; President's Address—Elmer F. Reustle; Election of officers; Important Points in Seasonal Management—E. J. Anderson, Extension Apiarist, State College; Heating and Bottling Honey—Roy H. Herr, Lancaster, Pa.; Business session. Wednesday evening, 6:30: Beekeepers' Banquet—Turkey dinner, price 75c. Sixth Street United Brethren Church, 6th and Seneca Streets, Harrisburg. Girl's Quartet, Carlisle, Pa.; Keeping "Bruin" out of the Hives—Harry W. Beaver; Recitation, 'Taint Nothin' to Laugh At; Impromptu Singing; The Hobbyist Beekeeper, and their Advantage to Commercial Honey Producers—H. W. Weatherford; Motion Pictures, New Reel of Extracting and Heating Equipment—E. J. Anderson; Girl's Quartet. January 23, Thursday morning, 9:30: Address—Representative A. I. Root Company, Medina, Ohio; The Fruit Pollination Problem, and How to Meet It—H. W. Weatherford; Ten Years of 4-H Bee Club Work, Illustrated with colored slides—Russell M. Smith, Tionesta, Pa.; Recreation of the Beekeeper—H. B. Sellers, Drexel Hill, Pa.; Helps for the Back-Lot Beekeeper—(Speaker to be supplied); Roll Call of Counties and Visiting Beekeepers. Thursday afternoon, 1:30:Address—Walter Severson, Albany Branch Mgr., G. B. Lewis Co., Albany, N. Y. Preparation and Care of Comb Honey for Marketing—E. J. Anderson; Round Table Discussion—Led by J. S. Fleck, Pittsburgh, and A. T. Keil, Mars, Pa; Report of Committees; Adjournment.

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During National Honey Week the Sarasota County (Florida) Beekeepers' Association put on six 15-minute broadcasts over the local station, previous to National Honey Week, on different phases on bee culture and uses of honey, at which time National Honey Week was mentioned. They also had four displays of honey during the Week, with a placard calling attention to National Honey Week, three of these displays using observation hives. Two of the displays were in the lobbies of the local banks; one in a leading retail grocery store, and one in a leading local bakery. The County Agent's office furnished suitable bulletins, on beekeeping and uses of honey in the home.—W. E. Evans, County Agent.

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A wire just received tells us of the death of Thomas Atchison, State Apiarist of Alabama, on December 21. Our sympathy to the family.

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Just as we go to press word comes that Jes Dalton, for so many years prominent in Louisiana beekeeping, passed on suddenly due to a cerebral hemorrhage. The members of the Pelican State Beekeepers' Association send the following tribute to his memory: "Jes Dalton, 'Jes call me Jes', as he used to introduce himself is no more with us; another good scrapper that could not be bought, is gone. Day or night, rain or shine, he promptly answered to the call of trouble and stood by his friends to the finish. And if the going got rough and the whole world seemed against us, a sudden peal of his laughter would dispel the shadows and set everything right."

XUM

Asked and Answered

Wintering in Double Brood Chamber

Question.—I have a colony of bees with plenty of stores in upper hive but very little in lower hive. It will be packed for winter in a government type packing case. I wish to know the best way to manage this colony. In the early spring I feed my bees sugar syrup using fruit jars with perforated covers on top of the hives.—Wm. Morehead, Mich.

Answer.—If the upper story is quite well filled with honey, the colony should have enough for winter. Should your bees run short on stores during the spring months, you can feed them sugar syrup, using fruit jars with perforated covers, as outlined in your letter. It is quite important that the upper brood chamber, or, what is commonly called the "food chamber" be well filled with honey, in order that the winter cluster of bees may not reach the top bars of the frames before spring and thus run short on honey. A cluster of bees, during a very cold spell, is unable to move laterally, or sidewise, onto honey that may be in the outside combs of the brood chamber. A cluster easily moves upwards, even though the weather is quite cold.

Paint for Extractor

Question.—Can I paint my extractor aluminum color inside? It is worn in places.—J. J. Dvorak, Ohio.

Answer.—It is all right to paint the inside of your extractor, using aluminum paint. Be sure to use a liquid with the powder that is intended for metal. It is well to sandpaper the rusted parts of the extractor before applying the paint.

Characteristics of a Good Queen

Question.—Is there a way that an inexperienced fellow can tell a good laying queen?—Otis T. Lippincott, Ohio.

Answer.—A good queen can usually be told by her appearance and performance. The majority of good queens are quite large, although not over-sized, with a good, deep thorax and tapering abdomen. Her brood is quite regular, rather than spotted, and she keeps the cells of the brood chamber combs quite well filled with brood and lays in empty combs as fast as the young bees emerge.

Honey for Diabetics

Question.—Do you have any literature available that contains recipes with honey used in place of sugar for diets for diabetics?—Mrs. L. E. Lingenfelter, Ills.

Answer.—We regret to tell you that we know of no literature covering the use of honey in the preparation of breads, cakes, and other food products which could be safely eaten by a person afflicted with diabetes. This, as you know, is a very serious malady. Some persons, as you will note from our A B C and X Y Z of Bee Culture, who have diabetes, can use small amounts of honey, preferably tupelo honey which comes from the region of Apalachicola, Florida. This honey is high in levulose, which makes it especially adaptable to the use of diabetics. Whenever using honey in the diet of diabetics, one should do so under the direction of a competent physician. The average doctor may say honey can not be used with any more safety than cane sugar, but this is not true. There are people with diabetic tendencies who can use a moderate amount of honey with perfect safety; some claim that they have actually been cured.

Transferring from Box Hive

Question.—Do you consider it advisable to transfer bees from a box hive or "gum" to a movable-frame hive filled with honey at this time of year (Nov. 15). If so, how would you suggest doing it? The "gum" is practically the same size as a hive body. —Hallam Tudor, Indiana.

Answer.—Transferring should be attempted only during the active season when bees are flying freely. As the box hive occupied by the bees is practically the same size as the hive, you can, at the beginning of a honey flow next season, place the new hive directly on top of the old one. When nectar is going in freely, the bees will likely move up into the new hive. When the queen is found to be occupying the combs in the new hive, a queen excluder is placed underneath the new hive. This should be left on for three weeks, or until all of the brood in the lower hive has emerged. The new hive is set down onto the hive stand after the old hive has been set aside. The remaining bees are shaken out of the old hive, in front of the new hive on the old stand, and then the crooked combs remaining in the old gum are cut out and rendered into wax.

Cutting Queen Cells

Question.—How often should queen cells

be cut out and is there a special time to do it? After introducing a virgin queen to a colony how long will I have to wait before I can clip her wing?—Frank Barker, Pa.

Answer.—Cutting queen cells does not always prevent swarming. Sometimes a colony that is bent on swarming will swarm in spite of ordinary precautionary measures. If you are producing extracted honey, there is one way of stopping swarming, and this consists of raising all but one comb of brood out of the brood chamber into the supers, above the queen excluder. This comb of brood, with the queen, together with frames containing full sheets of foundation, or empty drawn combs, should be left down in the bottom brood chamber. This separates the queen from the brood and stops swarming, as a rule. When queen cells are started, that is, when you find eggs or very small larvae in queen cell cups, it is sometimes possible to stop swarming by destroying the queen cells. On the other hand, when you find advanced queen cells that are almost ready to seal over, the method already described, that of raising brood, sometimes called the Demaree method, is preferable. A virgin queen usually mates five days after emerging from the cell and in another five days she starts laying, making ten days from the time the queen emerges from the cell until she becomes a laying queen.

Extracting Honey During Winter

Question.—I have about 200 pounds of honey in standard combs that I would like to extract. Is there any way to warm the honey so that it can be extracted from the combs during cold weather?—J. L. Groton, Illinois.

Answer.—Yes, this may be done without difficulty. It will be necessary to keep the supers of honey in a heated room, for at least four or five days until the honey is warmed. It can then be extracted quite easily. It would be an advantage to heat the extracting room to a temperature of 85° F., and this could be accomplished by using an oil stove, keeping the doors and windows closed tightly.

Killing Bees in the Fall and Stocking Hives with Packages Next Spring

Question.—I am thinking of killing off my bees this fall and getting package bees in the spring. What is the latest improved method for doing this?—E. W. Strickler, Wisconsin.

Answer.—A beekeeper in northern Michigan, who practices this method, dequeens the colonies some time during August, then places a queen excluder underneath each brood chamber so that any virgin queens that might emerge from cells would not be able to get out of the hive to mate. The queenless bees continue to store honey and pollen during the fall months. Late in the fall the colonies are killed by using Cyanogas, a tablespoonful being used for each colony, the Cyanogas being thrown into the entrance of the hive. The hives are collected in the fall, stored in a suitable building during the winter and then returned to the apiary in the spring, in time for package bees. It would be necessary, of course, to make the hives mouse-proof during the winter months in order that the combs and honey be in good condition for the bees the following spring. In cold sections of the country this method may be advisable. We are inclined to favor wintering colonies, instead of killing them off, if conditions are favorable for wintering them. In the far North wintering bees successfully is somewhat difficult.

Drone has Grandfather But No Father

Question.—On the popular radio program "Information, Please" there was propounded the question "What animal has a grandfather but no father?" The answer was the drone bee. May I ask you to be so kind as to explain this to me?—John K. Musgrave, M. D., Pa.

Answer.—A drone, which is the male bee, has no father; but, strange to say, he always has a grandfather (a maternal grandfather). There are three kinds or classes of bees that lay unfertile eggs from which drones are produced. The queen bee, after she has mated with a drone, lays two kinds of eggs, fertile and unfertile. The fertile eggs produce worker bees which are undeveloped females and the unfertile eggs produce drones or male bees—a clear case of parthenogenesis, or virgin birth. A virgin queen, one that has not mated with a drone, due to abnormal conditions, will lay only unfertile eggs which produce drones. When a colony becomes hopelessly queenless, due to the virgin queen being lost in mating, or to some abnormal condition, some of the worker bees will lay unfertile eggs which produce only drone bees. So these drones have no father but they do have a grandfather, on their mother's side of the house.

XUM

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

CHOICE white clover honey in new 60's. Noah Bordner, Holgate, Ohio.

AMBER and clover honey in new 60's. George M. Sowarby, Cato, N. Y.

WHITE Clover, 6½c; amber, 5c, f.o.b. Frank R. Parmelee, LeRoy, N. Y.

EXTRA QUALITY clover extracted. Howard Grimble, Holcomb, N. Y.

FANCY clover honey, case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FINE clover honey, case or car. Leslie A. Davis, R. R. 2, Union City, Ind.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE Ohio clover honey, new 60's. Earle Flint, 124 Washington, Clyde, O.

BUCKWHEAT honey, new 60's, 6 cents. Woodward Apiaries, Clarksville, N. Y.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

FRANK RASMUSSEN, Greenville, Michigan. Fancy comb and extracted honey.

LIGHT and amber honey in sixties. Carl N. Holcomb, 1913 Highland Ave., Troy, N. Y.

GOOD extracted clover in sixties, 6c; amber, 5½c. H. G. Quirin, Bellevue, Ohio.

NEW CROP clover and amber honey packed in new 60's. H. B. Gable, Romulus, N. Y.

WHITE and amber honey in new 60, 10, and 5 lb. tins. Harry T. Gable, Romulus, N. Y.

CLOVER HONEY in sixties and comb honey. George Eykamp, 1221 Akin, Evansville, Indiana.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

FINEST quality buckwheat honey, new 60's, 6 cents. Seward Van Auken, Duanesburg, N. Y.

FINEST white clover extracted, liberal discount at our place, by truck. N. B. Querin, Bellevue, O.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

CHOICE white clover honey. Fives and sixties. Ralph Hibbard, 131 Benedict St., Watertown, N. Y.

EXTRACTED clover and amber honey. Quotations on request. Scott Traxler, Scottsburg, N. Y.

FOR SALE—1940 crop, white clover extracted honey in 60-lb. cans. L. S. Griggs, 711 Avon St., Flint, Mich.

MICHIGAN White Extracted in 60's. Strictly high grade in new cans. M. H. Hunt & Son, Lansing, Mich.

TUPELO HONEY, new 60's and barrels, 5 and 10-lb. buckets. Marks Tupelo Honey Co., Apalachicola, Fla.

FINEST QUALITY white clover honey, $7.00 per case, 120 lbs. Sample 10c. Arthur Thayer & Sons, Freeland, Mich.

WHITE extracted and amber, also few cases of white honey in shallow frames. Herman Crowther, Cass City, Mich.

NORTHERN Michigan Light Amber honey, in new sixties at 5c lb. Sample 10c. Lewis A. McIntire, Boyne City, Mich.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

LET US show you how you can save on your honey purchases. We also buy honey. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

WHITE CLOVER COMB, $3.00 case; amber, $2.50; clover extracted, 7c; amber, 6c; buckwheat 6c. C. B. Howard, Geneva, N. Y.

Best INSPECTED, Michigan clover honey. A limited supply still available. E. D. TOWNSEND & SONS, Northstar Michigan.

NEW CROP clover-basswood honey, water white in new cans. Send for sample and price. A. A. French & Son, Theresa, N. Y.

FANCY white clover extracted honey, can or carload. Price on request. Sample 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

SELECT LOTS white sweet clover, also processed white honey in 60-pound tins. A. I. Root Co., 224 West Huron Street, Chicago, Ill.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

20 TONS clover white extracted honey, case, ton or carload. Write for prices and sample. LEROY C. KEET, 1003 Leray Street, Watertown, N. Y.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

FANCY White Tupelo Honey. Will not granulate or ferment. Often used for diabetic patients, where other sweets are prohibited, with no ill-effects. R. R. Davis, Wewahitchka, Fla.

RASPBERRY HONEY blended with milkweed honey, two of the best honeys of Northern Michigan. Packed in 60-lb. cans, for 7c a lb. In 10-lb. cans for $2.00. We pay postage. Sample for 20c. Elmer Hutchinson & Son, Lake City, Michigan.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C.O.D. terms except when the buyer has thoroughly established his credit with the seller.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

WHITE and light amber extracted and comb honey. George Eykamp, 1221 Akin, Evansville, Indiana.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WANTED—Carlots honey; state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

HIGHEST cash returns made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Ky.

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WHITE and amber extracted and wax. Complete line bee supplies, tin and glassware. Alexander Co., Reynolds & Dorr—Route 3—Toledo, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

CARLOADS water white, extra white clover or alfalfa extracted. Submit samples, prices. Finger Lakes Honey Producers Cooperative, Inc., Groton, N. Y.

FOR SALE

SAANEN milk goats, $10.00 to $100.00. Noble Whitacre, Martinsburg, W. Va.

QUEENBEE PAINTING outfits $1.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

51 DADANT 4-story hives with empty frames, 55 shallow 8-frame supers. John Sueper, Grand Island, Nebr.

YOUR wax worked into medium brood foundation for 15c pound; 100 lbs., $10.00. Fred Peterson, Alden, Iowa.

BLACK walnut kernels from grafted walnut trees. 1 lb., 70c; 2 lbs., $1.25, postpaid in 5th zone. L. K. Hostetter, Rt. 3, Lancaster, Pa.

ATTRACTIVE prices on bee supplies and comb foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies, both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

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To Our Many Friends!

Our Best Friends are Satisfied Customers.

PETTIT'S PACKAGE BEES

MORLEY PETTIT

Tifton, Georgia. U. S. A.

Quality---Service Satisfaction

Each year the shipping season begins earlier. Be on time, place your orders now for package bees and queens.

—We guarantee—
Safe arrival—and—Satisfaction

Prices

2-lb. pkg. with queen	$2.00 each
3-lb. pkg. with queen	2.65 each
Queens	.60 each

THE IDEAL APIARIES
Estill, South Carolina

Caucasians Italians

Were You Satisfied

with the packages and queens you purchased last season? Was the service as good as you had a right to expect? If not, write

Weaver Apiaries

Navasota, Texas

A Good Rule to Go By

Buy your Italian bees and queens from

ALABAMA APIARIES
Mt. Pleasant, Alabama

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3-lb. package with queen	2.50
Queens	.65

Stover's--The House of Quality

Package Bees

Three-banded Italians
and Caucasians
Produced to please you

QUEENS of both races reared in separate locations bred to fill those hives with bees.

Hives and Supplies

All outside parts of our hives are made of Cypress, which defies decay; frames and inside fixtures of Western Pine.
Write for Literature.

THE STOVER APIARIES
MAYHEW, MISSISSIPPI

Quality Three-banded Italian Bees and Queens

Dependable Service
Booking orders for spring delivery.
W. O. GIBBS
Willacoochee, Ga.

Gaspard's QUALITY

Golden and Three-Banded Italian Queens and Package Bees for Spring 1941. Over twenty years' experience which assures you of prompt and efficient service. Book your order now and reserve shipping date. Write for prices on large quantity.

Address
J. L. GASPARD, Hessmer, La.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

THE ONLY complete line of wax rendering equipment ever offered—the "Perfection" Line. A size and type suitable for every commercial beekeeper. Write for descriptive circular. Robinson's Wax Works, Mayville, N. Y.

SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

8 BASSWOOD seedlings, or 10 RUSSIAN OLIVE—2-foot, or 6 PINK HONEYSUCKLE shrubs, or 8 JAPANESE BARBERRY, or 25 CARAGNA (hedging)—1 foot, or 3 transplanted BASSWOOD 3-foot, or 2 transplanted PUSSY WILLOW (early spring pollen), 3-foot—nectar producers, postpaid for $1.00 bill. Checks require 10c exchange. Local Lewis-Dadant Dealer. Nicollet County Nursery, St. Peter, Minnesota.

SEEDS OF HONEY PLANTS. Twenty interesting varieties for flower garden and waste land. 15c packet, eight packets $1.00. Circular free. Pellett Gardens, Atlantic, Iowa.

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ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

GOOD ITALIAN QUEENS. White Pine Bee Farms, Rockton, Pa.

WRITE for prices on Bees and Queens. Graydon Bros., Rt. 2, Greenville, Ala.

60 CENTS EACH for bright three-band young Italian queens. D. W. HOWELL, Shellman, Georgia.

CAUCASIAN package bees and queens, 1941. Write for prices. Lewis & Tillery Bee Co., Greenville, Ala.

FOR SALE—Forty colonies of bees. Free from disease. State inspected. Write H. W. Coley, Sarasota, Florida.

THREE-BANDED Italian bees and queens for 1941. Write for our circular. Alamance Bee Company, Graham, N. C.

QUEENS and package bees, very reasonable; starting shipping about March first. Write for prices. D. P. Green, Deland, Fla.

HELLO, friends! If you need package bees for spring delivery, let us quote you prices. The Norma Roy and Son Apiaries, Hessmer, Louisiana.

CAUCASIANS—Tested queens, $2; untested, $1; 10, 75c; 50, 65c; 2-lb. packages with queens, $2; 3-lb. packages, $2.50. Miller's Caucasian Apiaries, Three Rivers, Texas. Oldest exclusive Caucasian breeders west of the Mississippi.

GOOD PACKAGE BEES AND QUEENS are profitable. You can't beat ours for quality and production. Used for years by leading beekeepers of the U. S. and Canada. A trial order for 1941 will show you how really good package bees can be. Write me now, stating how many packages you may need and I will send you full information. Then, if you wish, we can get your order straightened out and the shipping date re-

served before the busy season. Young pure three-banded Italians. Select young laying queens of our own production. No drones. No disease. H. C. Short, Fitzpatrick, Ala.

WANTED—MISCELLANEOUS

WANT to buy 75 to 100 colonies of bees. State your lowest cost price. E. N. Swanson, R. 3, Lilly St., Mankato, Minn.

DESIRE to place three hundred hives of bees with the right party in central Iowa. M. C. Berry & Co., Montgomery, Box 684, Alabama.

POSITION WANTED

WANTED—Work as helper in commercial apiary. Four years' experience. Andrew Beeman, Grapevine, Arkansas.

HELP WANTED

HELP WANTED—One experienced man and one helper for coming season. Good opportunity for good help. M. E. Ballard, Roxbury, N. Y.

WANTED—Reliable young man, assist in our apiaries. Room, board furnished. Give particulars, age, experience, wages. Don Barrett, Howell, Miichigan.

WANTED HELP—For the coming season. Give age, height, weight, and experience, if any, and wages wanted, with room and board furnished. The Schultz Honey Farms, Ripon, Wisconsin.

MAGAZINES

MICHIGAN BEEKEEPER. The State Bee Magazine with a National Circulation. 50c a year. MICHIGAN BEEKEEPER, Rt. 3, Lansing, Mich.

DAIRY GOAT JOURNAL, Dept. 419, Fairbury, Nebr. (big monthly magazine, 3 years $1), gives complete information. Introductory 5 months, 10c.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly 7c6d. Apply Editor, Indian Bee Journal. Jeolikote, Dist. Nainital, U. P. India.

MAKE MORE MONEY raising poultry. Colored pictures of poultry and most common poultry diseases supplement valuable information. Six months 10c, two years 25c. American Poultry Journal, 567 South Clark, Chicago.

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, P. O. Box 43, Cleveland, Johannesburg, S. Africa.

MANY beekeepers have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto, 2, Ontario.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingworth, The Way's End, Foxton, Royston, Herts, England.

TOO LATE TO CLASSIFY

CLOVER and buckwheat in sixties. Gruelick & Son, Scotia, N. Y.

WANTED—Aster honey, candied. Send price and sample. Robt. W. Lane, Greeneville, Tenn.

Experience

That Best of All Teachers,

Says:

It Pays to Buy the Best

Get our free 1941 illustrated folder with new prices and other valuable information.

For Better

PACKAGE BEES and QUEENS

Write

THE PUETT CO.

HAHIRA, GEORGIA

Improved Select Italian Package Bees-Queens

A pleasure to work, and outstanding Honey-Getters. Selected for Maximum Crops, Hardiness, Gentleness, Non-Swarming, and Size.

PROMPT SHIPMENT and SAFE ARRIVAL Guaranteed.

Write For 1941 Prices.

R. B. HERIER CO.

Valdosta, Ga. U. S. A.

CARNIOLANS CAUCASIANS

Winter well, build up rapidly, prolific, very gentle, wonderful workers. Best for Western and Northern states. Reared and wintered here in the North. Ask for free paper. Queens and packages in season.

ALBERT G. HANN, Glen Gardner, N. J.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

Boosting Our Industry

One way to do this is to support the **American Honey Institute** which is doing such excellent work in advertising Honey. See page 38 for editorial "A Big Boost for Honey."

Help yourself by helping the **Institute.**

Send remittance to **American Honey Institute.**
MADISON, WISCONSIN

THE PROPOSED FEDERAL BEE-BREEDING PROGRAM

By E. C. Bessonet
Chairman Legislative Committee American Honey Producers' League

It is my desire to submit a report on the work that has been done and what is now being done to further the cause which has been supported by the Federation and the League.

While president of the Federation, I undertook the task of obtaining the requested $45,000 appropriation for the Division of Bee Culture so that a bee-breeding program could be established. During the first eight months, little progress was made although about 150 letters were sent to the various bureaus and officials including many Congressmen and Senators.

Through the kind co-operation of the Hon. Harry D. Wilson, the Louisiana Commissioner of Agriculture and who is also president of the Association, Southern Commissioners of Agriculture a new approach was made by obtaining the services of this organization. With Hon. C. C. Hanson who is the secretary of this organization and incidentally a willing worker, we began to see considerable activity through his efforts in propriation and when a little item like $200.00 stared us in the face, Mr. W. E. Anderson, our State Entomologist, came into the picture and offered his services in raising the amount. Mr. Anderson sent out 150 letters appealing for funds. The response was good, but unfortunately the bulk came from supply houses and not from many beekeepers.

At Omaha, the writer made a drive for funds which amounted to $82.25. Then again during the Tampa meeting $20.50 was raised, so we now have the required amount requested by Mr. Hanson which has been used to pay for the services of an economist and clerks to gather and prepare material for letters and briefs.

There will be many contacts with committees and officials which will be made by Mr. Hanson. There is no doubt about Mr. Hanson's ability to defend the issue when it comes before the various committees.

Since the Division of Bee Culture budget has been approved for the next fiscal year, Mr. Hanson is working for an amendment to the budget.

(Continued on page 61)

(Continued from page 60)

Is it Possible to Improve the Honeybee?

To answer this question let us look at the records which will shed some light on the subject.

The Iowa Experiment Station in collaboration with the American Bee Journal started a resistance program which proved beyond a question of doubt that there is such a thing as resistance in some strains of bees. After four years of intensive work, resistancy was raised to an almost incredible degree. The result of this work proved conclusively that bees respond to scientific breeding.

Dr. C. L. Farrar has conducted tests with different strains of bees received from about seven sources and his findings indicate that a great variation exists among the different stocks. We must conclude that bees are not just bees and that some breeders have obtained results through careful selection. Do we want a 30-pound strain or a 200-pound one? Do we want a high producing strain that is resistant to AFB? This is the purpose of the program we have in mind, and it is what we are working for.

With the evidence we have pointing to the possibilities of breeding bees to meet our ideals, it is up to every beekeeper to do his part by writing to his representatives in Washington requesting their support.

• • •

SHIFTING BORDERS OF THE PRICE-CUTTING FIELD

(Continued from page 11)

keepers. Orchardists and small-fruit growers face the same conditions. Some sell direct to the local people, others only through stores. (A roadside stand is a store.) The returns would probably be about the same either way, but selling direct from the packing house tends toward greater good-will, which may be of value in itself.

Since these sales are made at a minimum selling cost, the customers co-operating to that end, they do not constitute price-cutting. Nor do they have any demoralizing effect on prices in general. People buy the great bulk of their supplies at the stores as a matter of convenience, and expect to pay something for that convenience, just as they expect price concessions when they go to the trouble of calling at the packing house.

Portsmouth, Va.

• • •

NATIONAL BEEKEEPERS' AUXILIARY

(Continued from page 51)

cash prizes for membership contests. At a meeting October 24 a new constitution was adopted. The name of the organization was changed from the National Auxiliary of the American Honey Industry to the National Beekeepers' Auxiliary as it was the opinion of the ladies that there was no such organization as the American Honey Industry and the National Beekeepers' Auxiliary is made up of members of the State Beekeepers' Auxiliaries.

A great deal of credit for the success of the meeting should be given to the Nebraska women with Mrs. R. H. Walstrom as leader.—Mrs. E. H. Bremer, Secretary-Treasurer, Rt. 1, Box 368, San Antonio, Texas.

TOO LATE TO CLASSIFY

FINEST CLOVER extracted, case or car. Roediger Apiaries, Anna, Ohio.

WANTED—A young man under registration age, of good habits, to work bees. Must be experienced driver. Paul Wilson, Westwood, California.

A PROSPEROUS 1941 TO ALL
IS OUR WISH

Honey Producers can be prosperous if they buy package bees with queens that are reared properly by experienced Breeders from properly selected stock.

Poorly Reared Queens often are superseded before the flow is even started. Our Queens are Guaranteed Queens.

Two-pound packages with queens, each	$2.00
Three-pound packages with queens, each	2.50
Select Untested Queens, each	.70

Write for Prices on lots of 100 to 1000 packages.

THE CROWVILLE APIARIES, WINNSBORO, LA.

J. J. Scott, Prop., Rt. 1.

XUM

You Asked for It! We Have It! "Resistant" Queens

We have obtained Mother Queens of "Resistant" Stock from a very reliable source in the North and plan to operate a separate Queen-Rearing Yard for the exclusive breeding of Resistant Queens next Spring. We shall not attempt to guarantee either expressed or implied, the Resistancy of this Stock. Write quickly for your copy of our circular describing this Stock.

The Resistant Stock is in addition to our Regular Line of Three-Banded Progeny Test Italians. Do not confuse the new Line with our Regular Line. Our old Line has been further improved.

GARON BEE COMPANY **Donaldsonville, Louisiana**

BETTER BRED QUEENS

Three-banded Italians

Book your orders now. No deposit required. Subject to change on short notice. Our prices are in line with the best shippers. Let us quote you.

CALVERT APIARIES, CALVERT, ALABAMA

CARNIOLAN QUEENS

CARNIOLANS GIVE you more bees and honey per colony, and more profit in 1941

HAPPY NEW YEAR!

EPHARDT'S HONEY FARMS, **TORRAS, LOUISIANA**

Solicit Subscriptions

Among Your Beekeeping Friends

A number of persons have written us for our offer to reliable persons. However, we still have a few localities where the right person can secure a number of subscriptions.

Write for sample copies.

Give references.

Circulation Manager
Gleanings in Bee Culture
Medina, Ohio

HAPPY NEW YEAR

1940

The Record Breaker of the century. The coldest weather, the latest spring. Not withstanding we shipped all booked orders on time and 98% of the late ones in 24 hours of date received.

Something to crow about.

1941

We hope all our customers a most Happy and Prosperous year, and we pledge them the best service ever.

Prices will be just as low as quality will permit.

If you want bees, when you want them, Write us.

SULLIVAN, WRIGHT & CO., Gilbertown, Alabama

FREE

descriptive circular on any magazine listed.

MORE PROFIT . . . MORE PLEASURE will be yours if you receive each month the publication that caters to your hobby or special interest.
These magazines keep you informed, give you ideas, put you in touch with others who have the same interest that you have. All are monthlies.

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.50	Pacific Poultryman
.50	Sou. Calif. Rancher
1.00	The Pacific Fancier
.75	American Farm Youth
1.00	American Bee Journal
1.00	Beekeepers' Item
1.00	Gleanings in Bee Culture
1.50	American Pigeon Journal
1.00	American Rabbit Journal
1.00	Small Stock (rabbits, cavies, etc.)
.50	Rabbit Monthly (comm.)
1.00	Standard Rabbit Journal
1.00	American Fur Breeder
2.00	Amer. Natl. Fur & Market Journal
1.00	Belgian (Horse) Journal
.50	Dairy Goat Journal
1.00	Angora (Goat) Journal
2.00	Goat World
1.00	Hog Breeder (all breeds)
.50	Spot. Poland China Bulletin
1.00	Amer. Hampshire Herdsman
1.00	Sheep Breeder
1.00	The Sheepman
.50	Wool Sack (wool growers)
1.00	Milking Shorthorn Journal
1.00	American Cattle Producer

Rush your order today. All orders are acknowledged by return mail and your subscription is started at once. Send check, money order, bill, coin or stamps.

SEND NO MONEY: Send us your order on a postcard and we will bill you for it if you prefer.

MAGAZINE MART

Dept. GB La Grange, Ill.

1941 is Here

And again we solicit your bee and queen orders for spring delivery, with larger stocks of healthy bees and ample facilities. We will serve you faithfully and promptly. Let us know what your requirements will be. Descriptive catalog free.

BOLLING BEE CO., Bolling, Ala.
Breeders of Caucasians Only.

York's Package Bees and Queens

Quality Bred Italians

The past season was our greatest with an exceedingly heavy demand. A hearty thanks to all of our customers for making this possible. Orders were handled satisfactorily as we had ample bees to take care of the increased demand and delays were negligent. Did you place your orders right or did you lose valuable time and money on delays?
We will be better prepared than ever to handle your requirements for any quantity plus quality and service at the right price. Booking orders now for spring delivery.

York Bee Company

Jesup, Georgia, U. S. A.

(The Universal Apiaries)

XUM

Happy New Year

Let the coming year be a pleasant and profitable one by using

Package Bees and Queens

of our Imported Stock Italians

They Produce

Reports sent in voluntarily by our customers prove the SUPERIORITY in honey production and wintering qualities of these bees.

A card will put you on our regular mailing list for all new circulars and prices.

Rossman & Long

Box 133 Moultrie, Georgia

Caucasian Apiaries

Brooklyn, Ala.

Home of genuine Mountain Gray Caucasian bees. They are disease resistant, individual bees have longer life span, go afield earlier, and stay at it later.

Write for prices.

We solicit your business, be it for a single queen bee or a truck load of package bees.

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